The Santa Fe Trail Supply Chain 1821-1860

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Preface

The movement of consumer goods has always intrigued me. When I was about eight years of age in the early 1950s, my father (tire sales) took me with him to call on customers. I well remember the Campbell's Soup factory in Camden, New Jersey where I saw a long line of trucks waiting to unload tomatoes. He took me to the Camden shipyard where I boarded a freighter unloading cork for the Armstrong Cork Company. Close by was the Dietz and Watson meat slaughtering facility where the foremen took me on tour to see the beginning to end processing of pigs into numerous products. I was awed by the experiences, but never considered the sources of the tomatoes, the cork, or the pigs. I only thought of the soup, the corks, and the hotdogs in the stores.

Sixty-two years later, I am more intrigued and taken by the process by which goods make their way from point of origin to the consumer. When I visit venues like Las Vegas, sports stadiums, or watch shows about villages high in the Andes or Himalayas, I wonder about the process by which they are supplied. I rarely see large trailers unloading at Vegas hotels or at stadiums. I have never witnessed the movement of goods into the mountains of India, Nepal, or Africa. I have witnessed the early morning loading and unloading of goods by way of the canal system in Venice and have watched the movement of morning deliveries of goods in numerous international cities in Europe, Chile, and Asia.

Today, the process of supplying goods is handled on immense scales and with speedy delivery as contrasted to the past. Products from around the world can be purchased via websites, agents or by phone. They can be delivered in hours, a day or later to your door or business. Companies like DHL (Dalsey, Hillblom and Lynn), FedEx (Federal Express), and United Parcel Service (Worldwide Services), and other cargo carriers are constantly in the air and on the ground moving products around the world. To grasp the enormity of this process, access **Flightradar24.com** via your search engine and experience in flight aircraft in close to real time. At any hour day or night there are more than 8,000 aircraft in the sky around the world. In addition to transporting passengers many of them are carrying products for delivery.

Larger items such as cars, furniture, appliances, frozen foods, artificial flowers, sports shoes, or clothing are transported by container ship operators like Maersk, MSC (Mediterranean Shipping), CMA GGM (Compagnie Maritime d' Afrétement/ Compagnie Générale Maritime), COSCO (China Ocean Shipping Company/ frozen products), UASC (United Arab Shipping Company), and OOCL (Orient Overseas Container Line/ Hong Kong).

The modern container ship is an engineering marvel. Currently the largest container ship is the Triple E Maersk (Dutch). It is four football fields long and half a field wide (1200'X150'). It can haul 18,000 TEU (twenty-foot equivalent 20'X8') containers. Thousands of container ships of varying sizes are constantly on the move around the world or docked at ports.

The new additions to the Suez and Panama Canals allow for larger container ships and decreased delivery time. According to The Wall Street Journal (Monday, October 6, 2017) the $5.4 billion dollar expansion of the Panama Canal is a success. Although the Triple E and other large oil tankers cannot use the canal, larger ships that previously could not now can. Before the newer locks were completed the old ones handled a weekly average of 53,000 containers. In September it handled 58,000. US Importers as far inland as Tennessee now find it less expensive to bring containers to New York, Savannah, or Charleston and ship them by rail as contrasted to entering a west coast port and then shipping inland by rail and truck.

To better appreciate the nature of shipping and the number of ports, access **shipfinder.com** to see all the ships near and in port around the world. Take the time to look at container terminals in the word. The following are some the largest terminals in the world (http://www.worldshipping.org/about-the-industry/global-trade/top-50-world-container-ports).

1. Shanghai, China
2. Singapore
3. Shenzhen, China
5. Hong Kong (China)
6. Busan, South Korea
9. Dubai (United Arab Emirates)
18. Hamburg, Germany
19. Los Angeles
21. Long Beach
23. New York/ New Jersey
43. Seattle

Flightrader24 and *Shipfinder* can be initially addicting but a rewarding means of appreciating the concept of our modern day supply chain.

Several years ago, I was fortunate to witness the unloading of a container ship from atop a crane at the **A**merican **P**residential **L**ine Terminal at Long Beach (San Pedro). Apart from the unloading process, I was awed by the knowledge that in each of the thousands of containers there were products being unloaded onto trailers and rail to be sent out for delivery. Each container has a number which when entered into the company computer tells what is in the container and where it is going.

The impetus for writing this book was initiated when I visited Bent's Fort (authentic recreation) in southeast Colorado in the spring of 2016. I was there to share some historical information with the great-grandson of Kit Carson. John Carson, the National Park Service Interpreter gave me a personal tour of the fort that included numerous warehouses packed with goods. One room in particular caught my attention.

Large boxes of Chinese Imperial Twankay Tea were piled from floor to ceiling. My first thought was where did it come from? Obviously from China, but what I meant was how did it actually make its way from Shanghai or Canton to Bent's Fort in the 1830s and 1840s? I continued on to the trade room and for the first time saw it in a totally different way from all the other trade rooms I have seen in forts across the west. Instead of seeing the room as a place where goods were sold and or bartered, I looked at a specific item and reflected on its source as contrasted to its end sale. The more I thought about the origin of the goods the more I was committed to finding out from where in the world they came and how they made their way across the Santa Fe Trail from Missouri (pre and post statehood) and on to the city of Santa Fe between 1821 and 1860.

Stephen Craig Schell

June 2016

CHAPTER ONE

Brief History of Supply Chain

Supply Chain Management encompasses the planning and management of all activities involved in sourcing and procurement, conversion, and all logistics management activities having to do with the flow of goods and services- including the movement and storage of raw materials, work-in-process inventory, and finished goods from point of origin to point of consumption.[1]

The movement of goods and services is as old as civilization. Beginning with settlements (3000 BCE) along the Tigris and Euphrates in Mesopotamia, The Indus River Valley, Egyptians along the Nile and the Chinese along the Yangtze, the movement of trade goods can easily be seen as a 'supply chain'. The Silk Road, begun under the Han Dynasty (207BCE-220 CE) eventually connected China to the Mediterranean. It continued well into the 15th Century. The spice routes established much earlier in the Middle East and India impacted the eastern Mediterranean and then Europe after the 8th century.

Although the term Supply Chain Management (also called Business Logistics) was coined in 1982, the idea of managing the procurement and flow of goods was 'scientifically' discussed in the 1800s. Englishman Charles Babbage (1791-1871) is known for his analytic machine, a precursor to the modern computer, but in 1832 he published a seminal work ***On the Economy of Machinery and Manufactures***. In Chapter 20, he noted the improvements in various duties of operators in British mining operations and identifies under (#252, p 202) a materials man who selects, purchases, receives, and delivers articles required.[2] The Pennsylvania Railroad created a Supplying Department in 1866. Its responsibility was to identify sources and purchase materials.[3] In 1887, Marshall Monroe Kirkland, the Comptroller of the Chicago and Northwestern Railroad wrote ***The Handling of Railway Supplies;***

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[1] *Lummus, Rhonda R., and Vokurk Robert J., Defining Supply Chain Management: A Historical Perspective and Practical Guidelines (* Industrial Management & Data Systems, 1999, Volume 99 Number 1)

[2] Charles Babbage, *On the Economy of Machinery and Manufactures*, https://babel.hathitrust.org/cgi/pt?id=mdp.39015040107370;view=1up;seq=220

[3] Albert J. Churella. *The Pennsylvania Railroad Volume 1, Building an Empire, 1846-1917***,** 1st edition, (Philadelphia: University of Pennsylvania Press , 2013) https://ebookcentral.proquest.com/lib/CSU/reader.action?docID=3441846

Their Purchase and Distribution. In Chapter 3 Kirkland emphasized the need for centralized purchasing and having special purchasing agents.[4]

Another pioneer in the evolution of the idea of supply chain management was Frederick Winslow Taylor (1856-1915). Born in Germantown near Philadelphia, he began his career working for a steel company in 1878. He was interested in the coordination of labor as it related to time and motion processes. After years of observation and promotions, he left the company, went to work for the Manufacturing Investment Company of Philadelphia and in 1893 started his own consulting company. Thereafter he worked for the Bethlehem Steel Company. The publication of ***Principles of Scientific Management*** (1911) contains numerous ideas (Taylorism) regarding efficiency and optimization of procedures which he believed would result in greater prosperity for both the employer and employee.[5]

The **N**ational **A**ssociation of **P**urchasing **A**gents was created in 1915. Prior to that time, individual purchasing associations formed in major cities in the country. In 1968 it changed its name to the **I**nstitute for **S**upply **M**anagement.[6] Harvard University established a course in purchasing in 1917 and printed the first textbook in 1933. After Taylor, ideas associated with supply chain management expanded as new concepts and procedures were created. Increased mass production of consumer and military goods reduced customized production and influenced supply chain with standardization. Larger stores began to replace small retail operations. World War Two created even greater impetus for effective, efficient, and cost effective supply chain procedures. Since 1945, the discipline and study of Supply Chain Management is more important than ever in the expanding global economy. To better appreciate the extent of the subject, enter **cscmp.org/supply-chain-management-definitions**, open glossary of terms and survey the two hundred and twenty-two pages of concepts associated with Supply Chain Management.[7]

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[4] Marshal Monroe*, The Handling of Railway Supplies: Their Purchase and Disposition by 1842*,(Chicago: C.N. Trivess, 1887) https://archive.org/details/handlingrailway01kirkgoog

[5] Frederick Winslow Taylor, M.E., Sc. D, *The Principles of Scientific Management* (New York and London, Harper & Brothers Publishers, 1919) https://books.google.com/books?id=aIAZAAAAYAAJ&printsec=frontcover&source=gbs_ge_summary_r&cad=0#v=onepage&q&f=false

[6] www.worldebooklibrary.com/articles/National_Association_of_Purchasing_Mangement

[7] https://cscmp.org/supply-chain-management-definitions

According to *Lummus and Vokurka in their work* **Defining Supply Chain Management: A Historical Perspective and Practical Guidelines** (1999), supply chain initiatives were first seen in the textile and grocery industries where studies showed the time lag from raw materials to delivery was exceptionally long-with much of the time wasted in warehouses. Retailers created quick response (QR) strategies and grocers created a study called Efficient Consumer Response (ECR). Thereafter, companies associated with electronics, wood products, 'big box' retailers, and medical companies discovered the value of establishing supply chain initiatives.[8]

At present, large and small enterprises from raw materials to finished merchandise must utilize supply chain management tools. Companies utilize tools to control product quality, inventory levels, timing, and expenses. In addition, the involvement of politics, trade and tariff laws, quality control, and international relationships complicate global supply chains. In essence, a supply chain is an apt metaphor describing the connection of individual links from the first link (resources) to the last link (consumer) on the chain. You can also visualize the whole process (network) as three layers (tiers or planes) with interconnections.[9]

Oversight (Regulatory) Layer: Federal Trade Commission, US Customs, Border Control, US Coast Guard, World Customs Organization

Transaction Layer: Retailer, Non-Vessel-Operating Common Carrier, Foreign supplier, Consolidator, Import-Export Bank, Customer

Logistics Layer: Customer Vehicle, Truck Carrier, US Port Ocean Liner, Foreign Port

To summarize and have a better appreciation for what supply -chain management entails, look around your current location and choose an item (your computer, cell phone, article of clothing, a coffee cup- whatever you like. Now:

1. Work backward and identify the enterprise (store) from which it was purchased.

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[8] *Industrial Management & Data Systems* Volume 99 Number 1 1999 pp. 11-17MCB University Press ISSN 0263-5577

[9] Henry H Willis, and David S Willis, *Evaluating the Security of the Global Containerized Supply Chain, Technical Report*": *Infrastructure, Safety, and Environment*, RAND Corporation, 2004. www.rand.org/content/dam/rand/pubs/technical_reports/2004/RAND_TR214.pdf

2. By what means (transportation) did it arrive at that particular store?

3. Where was the product located before it got to that store?

4. How was the product transported to that location (distribution center) from the producer of the product?

5. Who made your product and where was it made?

6. If your item contains numerous parts try to figure out from where the manufacturer got the basic parts (up-stream producers) to make the final product.

7. If you are not yet lost in the 'fog of supply chain', consider the natural resources that were required to make the individual parts that were eventually assembled to make your item.

Next time you visit a 'big box' (Wal-Mart, Bed Bath and Beyond, Home Depot, COSTCO) or smaller store like ACE Hardware, Pier One, or Walgreens, look around and better appreciate how the many products traversed the supply chain.

Critical Factors Affecting Supply Chain Operations

Modern day supply chain management requires knowledge of more subjects than one person can handle. Apart from Business, there are numerous disciplines which contribute to a company's management. The following is a list[10] of critical factors that affect contemporary supply chain management. With a few exceptions, they were as relevant in the 19th century as today.

Environmental Uncertainty: This factor and sub-factors deal with unexpected changes related to the customer, supplier, competitor, and technology.

> **Company Environment**: Internal expectations, culture, and flexibility are more complex today than in the 19th century when companies were small and managed by one or few owners and staff.
>
> **Government Support**: Norms, regulations, policies, and advice from government agencies has been relevant to supply chain management since the colonial era when England set 'the rules'. After the American Revolution, government became more and more involved in setting norms, trade

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[10] Henry Quesada, Rado Gazo, and Scarlett Sanchez. *Critical Factors Affecting Supply Chain Management: A Case Study in the US Pallet Industry*, Virginia Tech, Purdue University, USA, http://cdn.intechopen.com/pdfs/32377.pdf

regulations, protections, and policies. Today the subject is more complex than ever.

Uncertainty Aspects from Overseas: Political, social, language, cultural, and communication issues have been present throughout our history. There are many examples of these issues that affected the trade of the Santa Fe Trail.

Information technology Telecommunications (Communication Communication and Planning tools: This topic deals with the means by which the supply chain is held together by a communication system(s). From the early 19th century to the present, this process has dramatically expanded and sped up.

Supply Chain Relationships (Suppliers, Customers): Relationship(s) is the 'metaphysical' force that holds the supply chain together. Hundreds of books have been written on the subject, and its importance cannot be stressed enough. Although relationships with suppliers and customers is extremely important today, relationships and trust between customers, buying agents, suppliers, producers, and conveyers of goods may have been even more critical regarding the Santa Fe Trail trade. Diaries and letters between the above groups demonstrate the importance of relationships.

Flexibility: Ability to react and adapt quickly to changes in the market and unpredictable events is crucial. Today, awareness of change(s) is immediate and 24/7. In the 19th century, a letter took weeks to cross the Atlantic or Pacific- one way. Awareness of changes in consumer tastes took weeks and months. The loss of a ship due to ocean storms was unknown until days after it failed to show up at port. Disasters affecting Santa Fe Trail traders ranged from loss of cargo due to weather, Indian attacks, sickness, and one's life. Unfortunately, news only traveled as fast as foot or horse and flexibility was difficult without communication.

Quality: Today 'Quality' is expected by the consumer. In the 18th and early 19th century, people living the Santa Fe area under Spanish and later Mexican rule were just happy to acquire goods and were not necessarily concerned with quality. However, As trade increased after 1821, so did the level of expectation. Quality became a factor in choice of product and cost.

Production System: What is described here is the interconnectedness of all the production puzzle pieces that contribute to the 'bottom line' (profit). The colonial system of production gave way to systems of production created by the Industrial Revolution. Today, analysis of production systems is a 24/7 operation that utilizes the principles of 'TQM' (Total Quality Management).

Supply Chain Management Performance : This area is very large in scope. It is concerned with overall evaluation of the entire supply chain from material procurement to deliver to the customer. The specific areas include:

> **Logistics**: Creating the collaborative and information systems that direct research, distribution, and strategic planning associated with **Supplier Markets**, **Supplier Performance**, and **Material Sourcing**.

Business Management: This area deals with what is known as Human Capital/ Resources. These are the people who make the company run. From top executives to all production and support staff members, each group contributes to the well being of the company. Although not always achieved, within each groups, analysis of processes (**Process Strategy**) contributes to the bottom line. Executive **Marketing Strategy** and **Innovation** are inherent in business management.

Business management in the 19th century consisted mainly of the decisions individual entrepreneurs, partners, and managers who strategized, innovated, and directed operation from 'the top down'. The evolution of employee input and welfare was a 20th century development.

Customer Satisfaction and Customer Service: These two very important factors are self evident today but not in evidence in the first half of the 19th century and probably little attention associated with the Santa Fe Trail trade. Obtaining satisfaction required a long wait for the traveling merchant, a ride to the retail store, or a trip to the manufacturer. Customer satisfaction and service very slowly emerged after the Civil War.

CHAPTER TWO

Distance, Speed, Time (Space Time Convergence)

Any discussion of supply chain management has to include the topic of geography. Whether 1821 or 2017, the issue of geography, speed, distance, and time, and their relation to communication and travel is relevant. This topic was central to one of the great forward thinkers of the twentieth century- Marshal McLuhan. McLuhan was a communications expert interested in understanding how we create and shape our 'learning tools' (technology) and, in turn, how we are affected by them. Although not his intent, his ideas are pertinent to an appreciation for how one aspect of supply chain evolved over time and our specific concern regarding The Santa Fe Trail supply chain. His continuous theme was "all technologies are extensions of our physical and nervous systems to increase power and speed."[11] McLuhan who died in 1980 would fully appreciate contemporary communications and the science of Supply Chain Management.

A modern application of McLuhan's idea is best demonstrated in the concept and use of **S**pace **T**ime **C**onvergence (Compression). Simply stated, it is the decline in travel time between locations as a result of innovations in technologies (transport, communication, delivery systems, etc.). The formula for **STC** inputs data (distance between two points, substance to be transferred, and the technology(ies) involved) and then derives a number (the **STC)**. That data can later be used to compare and contrast another time period involving the same two locations.[12] Comparing and contrasting data is useful to supply chain managers when they consider new strategies and apply Cost:Effectiveness analysis.

To better appreciate McLuhan and **S**pace **T**ime **C**onvergence, solve the following challenge. The year is 1818. You are visiting Warrington, England and tour a pin factory [13] - a subject made popular by the famous economic and political philosopher Adam Smith. You are taken by the inexpensive cost of pins derived by the 'division of labor' and believe you can make a nice profit by importing them into the United States. Assuming everything went perfectly, how would you get your 5,000 pins to your home town of newly established 'Old' Franklin on the Missouri River.

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[11] McLuhan, Marshall, *Understanding Media: The Extensions of Man* (New York: McGraw-Hill Book Company, 1964), 90.

[12] https://people.hofstra.edu/geotrans/eng/ch1en/conc1en/spacetimeconvergence.html

[13] T. S. Ashton. "The Records of a Pin Manufactory, 1814-21". *Economica* 15 (1925): 281–292. http://www.jstor.org.ezproxy2.library.colostate.edu/Head, Sir George, *A Home Tour Through the Manufacturing Districts of England in the Summer of 1835,* **(**London: Frank Cass and Company Limited, Second Edition 1968).

This is a daunting challenge but here are few facts.

- Warrington, England (on The Mersey River)

  20 miles East of Liverpool, England by land,

  30 miles by water (Mersey River)

- Shipping from Liverpool to New York started 1818
- No Erie or Pennsylvania Canals until the mid 1820s
- No Trans-Atlantic steam until after 1835
- Sailing west from Liverpool to New York required sailing against the 'westerlies' (strong prevailing winds blowing west to east between 40 and 60 degrees north latitude (3,000 miles) or
- Sailing to the African coast (Azores) and then west on the trade winds that blow northeast to west at 30 degrees north and south of the equator) (about 6,900 miles).
- From New York to New Orleans about 1800 miles by water
- Distance from New Orleans to St. Louis by water is 1,278 miles pushing upstream against a current of 4 knts (4.6 mph)
- Early steam flatboats could average 10 mph against the current [14]
- Distance from St. Louis to 'Old' Franklin by the Missouri River is about 200 miles by water pushing against a current of 2-3 knts (2.3- 3.5 mph)

Speed of Modes of Transportation in 1818

Foot	3.1mph
Horse/mule	4.0 mph/ two-beat trot or jog 8.1 to 12 mph
Wagon	8 mph
Ship (sail)	4.6 mph depending on shape of the hull, weight, wind, and weather.
Keel	15-30 poled miles/ day (against current)

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[14] Gudmestad, Robert *Steamboats and the Rise of the Cotton Kingdom* (Baton Rouge: Louisiana State University Press, 2011), 13.

Early Steam Barge	10 mph heading north against current

If you choose not to accept the challenge below are some options.

The Potential Routes

Warrington to Liverpool	1+ day (wagon)
Liverpool to New York or Philadelphia	50+ days (using shorter route)
East Coast to New Orleans	20+ days (sail)
Or, across Pennsylvania to Pittsburgh	18-35 days
Pittsburgh to St. Louis (Flatboat)	15+ days
New Orleans to St. Louis	80+ days (poled)
	7+ days (earliest steam/ a few boats existed)
St. Louis to 'Old' Franklin, Missouri	18+ days (poled)
	3+ days by steam (if available)

The approximate time from the Factory in England to the wharf at Franklin, Missouri would have taken a 120-169+ days depending on a route without steam on the Mississippi or Missouri Rivers and assuming perfect weather, efficient loading and unloading time schedules, and no delays of any kind (impossible). You would also have to consider the time of year as travel in the dead of winter would have been difficult due to Atlantic storms and prohibitive due potential ice on the Mississippi and or Missouri Rivers. If you paid the price for faster steam transportation from New Orleans north (if it was available when you needed it), the time would have been cut in half. The faster time table would have been the exception for transportation at that time.

As technology advanced, the **S**pace **T**ime **C**onvergence factor was dramatically affected. The following times are approximations and they assume continuous travel which was rare due to refueling, and unloading and loading cargo and passengers.

1830s

England to New York	35+ days
New York to Philadelphia	1+ days

Philadelphia to Pittsburgh	4+ days (via The Main Line of Public Works)
Pittsburgh to St. Louis	5+ days (steam)
New Orleans to St. Louis	7+ days
St. Louis to Westport	4+ days

1840s

England to New York	14+ days (steam)
Europe to New Orleans	45-60 days (sail)
Northeast US to New Orleans	2 weeks
China to East Coast	110+days (Clipper Ships)
Macao to NY	78+ days (around Cape Horn)
New Orleans to St. Louis	4 days (fastest on record)
St. Louis to Glasgow, MO	2 days
St. Louis to Westport	4 days

1850s

England to New York	10 days or less (steam)
Philadelphia to Pittsburgh	13 hrs (1854)

CHAPTER THREE

Introduction to Trade Goods

Trade goods from the United States, Europe, Latin America, and Asia increasingly found their way to Santa Fe and down *El Camino Real* after 1821. As a result of the Industrial Revolution most products came from Europe (England) in the early years. America was trade export oriented but most exports consisted of natural resources of which 75% was agriculture, 20% forest and sea products, and less than 5% manufacturing. Sixty percent of all exports went to Europe.[15] United States trade was heavily weighted toward imports until 1870. Only in the last three decades of the 19th Century did American exports exceed imports.[16]

For the first half of the nineteenth century, The United States and Great Britain were each other's major trading partner. Over thirty-five percent of US imports came from Britain. The remaining imports came from Canada, the Americas, Asia, and the West Indies. The Chart Below demonstrates the percentages breakdown of Trade.[17] As the century evolved and the United State absorbed more territories, the percentage of imports from non-European sources increased.

	Europe			**Americas**			**Asia**
	UK	**FR**	**GER**	**CAN**	**CUBA**	**BRAZIL**	
1821-1828	40	10	3	<1	9	2	11
1829-1838	37	15	3	1	8	4	8
	Europe			**Americas**			**Asia**
	UK	**FR**	**GER**	**CAN**	**CUBA**	**BRAZIL**	
1839-1848	38	19	3	1	8	5	8
1849-1858	42	14	5	4	8	6	7
1860	39	12	5	7	9	6	8

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[15] Robert E. Lipsey, *U.S. Foreign Trade and the Balance of Payments, 1800-1913*, NBER Working Paper No. 4710 Issued in April 1994 NBER Program(s), 2. www.nber.org/papers/w4710)

[16] Lipsey., 10.

[17] Bureau of the Census (1975), Accessed from: www.nber.org/papers/w4710.pdf, 41.

Origin and Descriptions of Goods (Merchandise)

In 2012, a former teaching colleague, Dr. Susan Calafate Boyle, working in the Santa Fe Archives, compiled a list of trade goods associated with the Santa Fe Trail. Dr. Boyle describes the goods below. I specifically chose the years 1821 to 1861 because the Civil War created major disruptions to trade and after the war the rail road modernized the supply chain.

Based on Dr. Boyle's data and my integration of duplicated items, I arranged the categories of goods in descending order of quantities: **Household**, **Fabrics**, **Clothing**, **Personal Use**, **Tools**, **Food**, **Medicaments** (Medicine), and **Miscellaneous** (musical instruments, toys, religious items, books).

To contribute to the reader's understanding and reference, I condensed and alphabetized Dr. Boyle's list of products. Next, I give a description of the product and, when possible, its point(s) of origin(s) between 1821 and 1861. However, without having specific information regarding producers and maker's marks on extant objects from museums and or archives, identification was often difficult or impossible.

Another major challenge was identifying the specific origin of a product. During the early years of the Santa Fe Trail, most goods came from outside the United States, the eastern states and up *El Camino Real* from Mexico City. However, as transportation and production expanded after 1820, more and more goods were produced in cities along waterways (Pittsburgh, Wheeling, Cincinnati, Covington, Louisville, St. Louis, and New Orleans)

Identifying and integrating material from disparate sources was difficult at times. Many searches and sites yielded only one or two useful words or sentences that had to be integrated into one sentence. To specifically cite several sources in one sentence was not practical. To make the sections readable, I list the sources at the end of each subject. Unless stated that the source was 'accessed' from an internet source, my sources for books were the Colorado State University Library in Fort Collins, Colorado, The Colorado State University Avenir Museum of Design and Fashion, or my personal library.

Associated with several products, I note that a similar item was excavated in 1987 at the *Arabia* Steamboat site near Kansas City, Missouri (See http://1856.com/arabias-story/)**.** The steamboat *Arabia* sank in 1856 on the Missouri River. Although the *Arabia* was headed north on the Missouri River, products excavated from this site were manufactured by producers who would likely have been part of the Santa Fe Trail supply chain. Of the items on my list, the museum staff was able to identify maker's marks on nineteen specific items. An excellent book regarding the excavation is Corbin Annalies' *The Material Culture of Steamboat Passengers: Archaeological Evidence from the Missouri River*.

The Merchandise of the Trade

Commercial Goods Carried along the Santa Fe Trail and El Camino Real de Tierra Adentro (1825-1880)

Compiled by Susan Calafate Boyle

National Trails Intermountain Region

February 2013

The majority of the items listed in the table below come from *guías* issued in Santa Fe, New Mexico, to those merchants, both Mexicans citizens and foreigners, who traveled down El Camino Real into the interior of Mexico. This list also includes domestic manufactures (*efectos del país*), those locally produced items of trade which required no duties if taken to other Mexican provinces.

The first column is the Spanish original. The second is an English translation of the term. The third classifies each item to one or more categories, and the fourth identifies the roll and frame number of the Mexican Archives of New Mexico where the item is found. Additional articles have been included from the inventory of the Manuel Delgado property at the time of his death in 1854 (Dingee Collection); others from the papers of Manuel Alvarez at the State Records and Archive Center at Santa Fe, and from the papers of José Felipe Chávez at the Center for Southwest Research at The University of New Mexico and the State Records and Archive Center at Santa Fe.

The list contains over nine hundred different kinds of merchandise, including household goods (26.5%), fabrics (17.4%), clothing (15.5%), personal use (12.4%), tools (8.0%), food (4.3), local merchandise (2.3%), and medicaments (3.9%). There are also musical instruments, toys, religious items, books, and many others. These figures provide an idea of the variety, but not the frequency or amounts of items. In terms of the size of the shipments fabrics were the most important trade component. Millions of *varas* of 159 different types of fabrics came over the Santa Fe Trail and were sold down El Camino Real all the way into Central Mexico.

It should be noted that besides the Bible shipments sometimes listed the specific titles of certain books – Vida de Washington (Washington's Life), Fábulas de Iriarte (Iriarte's Fables), Catecismo histótico (Historical Catechism), Templarios (a volume associated with the Knight Templars), Ejercicios cotidianos (Daily Exercises), Diccionarios de inglés (English Dictionaries), and Novelas en Castellano (novel in Spanish).

Many items were classified according to quality in a variety of ways. For example, they could be described as *finos* (fine), *de alta calidad* (high quality), *de lujo* (luxury), *ordinarios* (ordinary), *comunes* (common), *para el uso* (common?), *para el campo* (for work in the fields?), and possibly others which I have failed to record so far. The merchandise lists also included, especially for fabrics and clothing, color specifications.

At this time the list is incomplete and not all terms can be translated. Spelling has been standardized, except in those cases where the specific meaning of a word is not known as for example, escochilipán, sayasaya. Some of these terms were used repeatedly, but so far they have defied translation. Tw decades ago Joe Ben Wheat spent considerable time on the topic and was also unable to pin down the meaning of some of these words. There are 50 words in need of specific translation. If you have any ideas, please contact Susan C. Boyle with your information (susanboyle769@gmail.com)

Spanish Name	**English Name**	**Category**
abalorios	glass beads	personal
abanicos	fans	personal
aceite de Bretaña	Brittany Oil	cooking
aceite de cartón	oil in carton	cooking
aceite de comer	cooking oil	cooking
aceite de linaza	linseed oil	miscellaneous
aceite de oliva	olive oil	cooking
aceite virgen para el gasto	virgin oil	cooking
aceiteras	cruet	household
acero	steel	tool
ácido de limón	lemon extract	cooking
ácido nitro muriático	nitric muriatic acid	medicine
acolchado	quilted fabric	fabric
agua de colonia	perfume	personal
agua foetida	??	medicine
agua fresca (cajas	??	??

Spanish Name	English Name	Category
de)		
agua fuerte	liquor?	food
aguarrás	turpetine	household
agujas	needles	household
agujas de coser	sewing needles	household
agujas de medias	stocking needles	household
alambique	still	household
alambre para agujas	wire to make needles	household
alcanfor	alcanphor	medicine
alcantástica	??	medicine
aldabas de puerta	door knockers	household
aldabas para baúl	bolts for chests	household
alemanica	??	fabric
alepin	light wool fabric	fabric
aleznas	awls	tool
alfileres [bultos]	pins	household
algodón	cotton	fabric
algodón engomado para entretela	sticky cotton for lining	fabric
alhajas de mujer	women's jewelry	personal
almador	??	??
almador (género de)/		
almodor?	fabric	fabric
almarón	??	??
almendra	almond	food

Spanish Name	English Name	Category
almidón	starch	food
almohadillitas para señora	little pillows for ladies	personal
alquitrán	tar	household
alverjones verdes	green peas	food
amburgo	fabric from Hamburg	fabric
anil	indigo	household
anillos	rings	personal
anillos corrientes	common rings	personal/
anillos de metal	metal rings	personal/household
antas	elk skins	local merchandise
anteojos	glasses	personal
anzuelos	fish hooks	tool
arandeles de ojalata	tin washers	household/tool
aravias de algodon	??	??
aretes	earrings	personal
arroz	rice	food
artesitas de mesa	small wooden box	household
asentadoras de navaja	razor strops	personal
asidores de baúl	trunk handles	household
ataderos	??	??
atolchados de violin	violin strings/pegs	musical instrument
azúcar	sugar	food
azúcar candi	sugar cubes??	food
azúcar de plomo	??	food?

Spanish Name	English Name	Category
azucarera	sugar bowl	household
azucareras de china	China sugarbowls	household
azucareras de cristal	crystal sugarbowl	household
azuelas	adzes	tool
balancinas	small scales	household/tool
balancitas	small scales	household/tool
balas de pavilo	??	??
balleta apanada	baize with a velvet finish	fabric
balleta de algodón	cotton baize	fabric
bálsamo	balsam	medicine
bandas de burato	??	??
bandas para el uso	??	??
bandejas	trays	household
barajas	playing cards	personal
barege	??	fabric
barinetas	??	tool??
barniz	varnish	household
barniz para las botas	shoe polish	personal
barrenas	auger	tool
barrenitas	small auger	tool
barril	barrel	household
bastidor de sombrero con su forro	stretcher for hats with their linings	household
batista	fine cambric	fabric
baúles de ojalata	tin trunks	household

Spanish Name	English Name	Category
bayena	??	??
bayeta	baize with a velvet finish	fabric
belfa	??	fabric
bercarrador	??	tool??
bercuas	??	tool??
bermillón	vermilion	household
bidacos graduados	??	??
billar (bolas de)	billiard balls	household
bisagras	hinges	household
blonda	some type of lace	fabric
bocací	bocacsine??	fabric
bogota	??	fabric
bolitas de piedra para niños	marbles	toy
bolsitas de chaquira	little bags of beads used to trade with the Indians	trade item
bombasí	bombazine	fabric
bombayata	??	fabric
borlón	linen and cotton cloth with small tassels	fabric
boslán	??	??
botellas de vidrio	glass bottles	household
botes para té charolados	glazed tea mugs	Household
botoncitos de pechera	little buttons for shirt or bosom	clothing

Spanish Name	English Name	Category
botones de acero	steel buttons	clothing
botones de bola	buttons of ??	clothing
botones de camisa	shirt buttons	clothing
botones de campana	buttons of ??	clothing
botones de caroca	buttons of ??	clothing
botones de casaca	coat buttons	clothing
botones de chaleco	vest buttons	clothing
botones de chaqueta	jacket buttons	clothing
botones de concha	seashell buttons	clothing
botones de cordón	braid button	clothing
botones de cuerno	horn buttons	clothing
botones de estaño	tin buttons	clothing
botones de filigrana	filigree buttons	clothing
botones de hueso	bone buttons	clothing
botones de metal	metal buttons	clothing
botones de pantalón	pants buttons	clothing
botones de seda	silk buttons	clothing
botones de tirantes	suspender buttons	clothing
botones de vidrio	glass buttons	clothing
botones dorados	gold-plated buttons	clothing
botones forrados	lined buttons	clothing
brazil molido	ground brazil??	food
bretaña	Brittany cloth	fabric
bretaña de Toland?	??	fabric
brin	fine canvas	fabric
briquete	coal briquet	household

Spanish Name	**English Name**	**Category**
broches	fasteners, clasps, hooks and eyes	clothing
broches de túnica	fasteners for gowns	clothing
broches para capa	cape fasteners	clothing
brújulas de bolsa	pocket compass	tool/household
bueles	??	tool??
burato	Woolen cloth	fabric
cabadores	shovels	tool
cabestros	halster	tool
cabos de alezna	awl handles	tool
cacao	cocoa	food
cachon	??	medicine
cachuchas de palo	men's caps made of??	clothing
cachuchas de pelo	men's caps made of??	clothing
cadenas de reloj de plata y oro	silver and gold watch chains	personal/jewelry
cadenitas de hierro	little chains made of iron	personal/tool
cadenitas para reloj	watch chains	personal/jewelry
café	coffee	food
café corriente	common coffee	food
café fino	fine coffee	food
cafeteras	coffee pots	household
cajas de bola	boxes made of ??	household
cajas de costura	sewing boxes	household
cajas de costurera	sewing boxes	household

Spanish Name	English Name	Category
cajitas charoladas para el tabaco	tobacco boxes	household
cajitas curiosas	curio boxes?	household
cajitas de acero para tabaco	steel boxes for tobacco	household
cajitas de afeitar	shaving boxes	household
cajitas de barbero	barber boxes	household
cajitas de hilo	boxes for thread??	household
cajitas de molde de marquesote	mould boxes of marquesote	household
cajitas de oblea	boxes made of very thin metal?	household
cajitas de ojalata para té	tinplate tea boxes	household
cajitas de perfume	boxes for perfume	personal
cajitas jaboneras de estaño	soap dishes made of lead	household
cajitas para café	coffee boxes	household
cajitas para píldoras (nidos de)	nests of pillboxes	household
cajitas para rasperos	march boxes?	household
cajitas para té	tea boxes	household
cajoncitos de jaboncitos	little boxes or drawers for soap	household
caladillo	some type of lace	fabric
cálamo	??	medicine
calcadores	tracing forms?	household
caletilla	??	fabric
cálico	calico	fabric

Spanish Name	English Name	Category
calomel	purgative	medicine
cambray	cambric	fabric
camisas	shirts	clothing
camisas de hickory	hickory shirts	clothing
camisas de indiana	calico shirts	clothing
cammomile	chamomile	medicine
campanillas	little bells	household
campanillas de mesa	table bells	household
candados	padlocks	household
candados de cobre	copper padlocks	household
candeleros de bronce	bronze candlesticks	household
candeleros de latón	coarse tinplate candlesticks	household
candeleros de ojalata	tinplate candlesticks	household
candeleros plateados	silver-plated candlesticks	household
candeleros plateados grandes	large tinplated candlesticks	household
canela	cinnamon	food
canga	clay (cangue)	??
cantásida [cantárida]	blistering plaster	medicine
capas	capes	clothing
capas de paño	capes made of woolen cloth	clothing
capitas	little capes	clothing

Spanish Name	English Name	Category
capotas de hilo	linen bonnets	clothing
caranchanes	??	??
cardas	carding bruches	household
carranclán	gingham, seersucker	fabric
carretillas de hilo	spools with thread	household
carretillas de seda	spools with silk thread	household
carretitas de mano	hand carts	toy
carteras	handbags	personal item
carteras de chaquira	handbags made of beads to trade with the Indians	personal item
carteritas	small handbags	personal item
cascabeles	little bells	personal item
casimir	cashmere	fabric
casimir de Rouen	cashmere from Rouen	fabric
casinete	low quality cashmere	fabric
catecismos	catechisms	book
cazuelas	earthen cooking pan	household
cepillitos para razurarse	shaving brushes	personal
cepillos de barba	beard brushes	personal
cepillos de bota	boot brushes	personal
cepillos de cabello	hair brushes	personal
cepillos de limpiabotas	boot brushes	personal

Spanish Name	**English Name**	**Category**
cepillos de ropa	clothes brushes	personal
cepillos para encalar	brushes for whitewashing	household/tool
cepillos para la dentadura	tooth brushes	personal
cepillos para limpiar zapatos	shoe brushes	personal
cera	wax	household item
ceralson	??	fabric
cercassian	??	??
cerenture de colonel	??	??
cerilla para los labios	chapstick	personal item
cerraduras	locks	household item
cerrojos de puerta	door locks	household item
chalecos acolchados	quilted vests	clothing
chalecos bordados	embroidered vests	clothing
chalecos corrientes	common vests	clothing
chalecos de casinete	vests made of low quality cashmere	clothing
chales	shawls	clothing
chali (cortes de)	??	fabric??
chapas de puerta	metal plates for doors	household
chapitas de baúl	metal plates for trunks	household
chaquira	beads for trade with the Indians	trade item
charalos	??	??

Spanish Name	English Name	Category
chicle (arroba)	gum	food
chile de cayenne	cayenne pepper	food
chile en polvo (botellas de)	bottles of powdered chile	food
chinelas para hombre	men's slippers	clothing
chinitos	??	clothing
chinos para mujer	??	clothing
chocolate	chocolate	food
cigarreras	cigar boxes	personal
cinceles	chisels	tool
cinta de cincha	cinch strap	household
cinta de lana de colores	woolen ribbon of various colors	fabric
cinta de lana rayada	woolen ribbon striped	fabric
cinta para ataderas	straps to tie things with	household
cintas blancas	white ribbons	fabric
cintas negras para velo	black ribbons for veil	fabric
cintita (bultos de)	bundles of small ribbons	fabric
cintitas para reloj	small ribbons for watches??	personal
cintones	large ribbons?	fabric
cinturones	belts	clothing
cinturones de listón bordado	embroidered belts made of listón	clothing

Spanish Name	**English Name**	**Category**
circacia	??	fabric??
clavitos (papelitos de)	little nails	household item/tool
clavitos de zapatero	shoemaker's nails	household item/tool
clavo	cloves	food
clavos	nails	household item/tool
clavos para cortinas	curtain nails	household item/tool
clavos para sacar licores	corkscrews?	household item/tool
coco	cuenta, bolita	personal
cola [libras de cola]	glue?	household
colchas	quilts	local merchandise
colchones	mattresses	local merchandise
coleta	mahon	fabric
coletilla	coletillo is a sleeveless bodice	clothing?
coletilla de cáñamo	??	clothing?
coletilla de holanda	??	clothing
collares de perro de cadena	dog collars made of chains	household
compaces de hierro	iron compasses	household
confites para el gusto	assorted candies	food
copas de cristal	stemmed crystal glasses	household
coquillo	white cotton cloth	fabric

Spanish Name	English Name	Category
corbatas	ties	clothing
corbatas de algodón	cotton ties	clothing
corbatas de batista	cambric ties	clothing
corbatines	bow ties	clothing
cordobanes	cordovan	??
cordón	ornamental cord	fabric
cordoncillo	small cord	fabric
cordoncillo de cantón	??	fabric
cordoncillo de plata	silk ribbon	fabric
cordones para capa	laces for cloaks, capes	fabric
corduroy de Pittsburg	corduroy from Pittsburgh	fabric
corsets	corsets	clothing
cortaplumas	penknife, pocketknife	personal item
cortes de tunica	tunic cuts	fabric
costalitas	small sacks	personal
cotensi florete	linen cloth with flowers	fabric
cotensia	linen cloth	fabric
cotenu	cloth made of hemp	fabric
cotenu de China	hemp from China	fabric
cotín	??	fabric
cotonía	dimity, corded cotton fabric	fabric
cotonilla	misspelled cotonía?	fabric

Spanish Name	English Name	Category
cravatos	could it be cravat? tie	personal
cremor tártaro	cream of tartar	food
crepe	embossed weaving made of linen and cotton	fabric
crepe de Leon	crepe from León	fabric
crespón	type of crepe	fabric
cristales	beads	personal
cruces	crosses	religious
crucifijos de latón	tin crosses	religious item
cruz de metal	metal cross	religious item
ctuacales de hoja de lata	tin ??	??
cuartillos	liquid measure ca .5 liter	household
cuberas de palo	small cask, bucket, pail of wood	household
cúbica	woolen fabric	fabric
cubiertos	silverware	household
cucharas	spoons	household
cucharas de fierro	iron spoons	household
cucharas de metal blanco	spoons of white metal	household
cucharas de peltre	pewter spoons	household
cucharitas	teaspoons	household
cucharitas de metal blanco	white metal teaspoons	household
cuchillos	knives	household

Spanish Name	English Name	Category
cuchillos cachas de palo	knives with wooden handles	household
cuchillos con tenedores	knives and forks	household
cuchillos corrientes	common knives	household
cuchillos de carnicería	butcher knives	household
cuchillos de carpintero	carpenter's knives	household
cuchillos de zapatero	shoemaker's knives	household
cuchillos flamencos	Flemish knives?	household
cuellos de alepín	collars made of light wool fabric	clothing
cuellos de muselina	muslin collars	clothing
cuellos de punto de mujer	collars made of knitted fabric for women	clothing
cuentas (libras de)	beads	personal
cuentas chinas	Chinese beads	personal
cuentas corrientes	common beads	personal
cuentas de concha	seashell beads	personal
cuentas de cristal	crystal beads	personal
cuentas de vidrio	glass beads	personal
cuentas de vidrio vacío	empty glass beads	personal
cuentas doradas y plateadas		personal
cuentas finas (ogaderos?)	fine beads	personal
cuerdas de pescar	fishing line	tool/household

Spanish Name	English Name	Category
cuerdas de violín	violin strings	musical instrument
cuero de oso	bear skin	local merchandise
cueros de cibolo	bison hides	local merchandise
cueros de cibolo de marca	buffalo robes of some type	local merchandise
cueros para afilar navajas	leather to sharpen razors	household
curtain lace	curtain lace	fabric
dagas	daggers	tool
damasco	damask	fabric
dedales	thimble	household
dedales de plata	silver thimbles	household
dedales de sastre	tailor thimbles	household
desembarrasadores	brushes to clear mud ?	household
despabiladeras	snufflers for candles	household
diccionarios de inglés	English dictionaries	book
dril	denim	fabric
dril de algodon	cotton denim	fabric
dulces	sweets	food
embudos de ojalata	tin funnels	household
encaje	lace	fabric
entorchadas para sombreros	strings covered with silk or wire for hats	personal item
epecacuana	??	??
escarlata	red cloth	fabric
escarlata corriente	common red cloth	fabric

Spanish Name	English Name	Category
escarlata fina	fine red cloth	fabric
escarminadores	disentagling combs	tool/household
escarpines de algodón	cotton booties	clothing
escarpines de seda	silk booties	clothing
esclavinas	capes	clothing
esclavones	large capes?	clothing
escobetillas	little brooms	personal
escobitas para la barba	little brooms for the beard	personal
escochipilan	??	??
escofia	hair net?	personal
escofinas	rasps	tool
escoplo	chisel	tool
escuadras de fierro	iron squares	tool
esencia de yerba buena (redomas de	?? herbs	medicine/food
eslabones	steels for sharpening knives; chains	tool
espada	spade	tool
espaviladeras	snuffers	hoursehold
espaviladeras de acero	steel snuffers	household
espaviladeras de latón	brass snuffers	household
espejitos	little mirrors	household
espejitos de sol	sun clocks	household

Spanish Name	English Name	Category
espejos de cartón	cardboard mirrors	household
espejos de papel dorados	mirrors of gold-plated paper	household
espirit de mitre	??	medicine
espíritu de nitro	??	medicine
espuelas	spurs	household
estambre	worsted woolen yarn	fabric
estampas	holy cards, seals	religious
estampas para cerrar cartas	seals to close letters	household
estopilla	coarse cotton cloth	fabric
estribos	stirrup	household
estuches	cases	household
estuches de navajas finas	cases for fancy pocket knives	personal
etangavillas	??	??
eucalytus sedicative	eucalyptus ??	medicine
fagoncitos de fierro con sus correspondientes cañones	little blades of iron in a sheath? (draw knife?, adze?)	tool
fajas de listón	sashes worn around the waist	clothing
fajas de mujer	women's sashes	clothing
fajas de seda	silk sashes	clothing
faroles de cristal	crystal lights	household
felpa	plush	fabric
ferlín	??	??

Spanish Name	**English Name**	**Category**
filleras	??	??
fistoles para las camisas	necktie pins	personal
fleco	fringe	fabric
flix de sufre	sulphur fluid	medicine
florentina	fabric from Florence	fabric
fósforos	matches	household
franela	flannel	fabric
franqueritas	??	??
frascos de cristal	glass jars	household
frasquera	bottle frame or case	household
frazadas	blanket	household
frazadas atilmadas	some type of blanket	local merchandise
frazadas cameras	blankets for the bed	household
frazadas corrientes	common blankets	household
frijoles	beans	food
fulminantes	percussion caps, explosives	tool/weapon
fustón	tela de algodón con pelo por una cara	fabric
gagon	??	medicine
galletas	crackers	food
galón	gallon, braid	fabric
galón de lino	linen braid	fabric
gamuzas	leathers	local merchandise
gargantillas de cuentas	bead necklaces	personal

Spanish Name	English Name	Category
gargantillas de perlas falsas	false pearl necklaces	personal
garniel	??	??
gasa	chiffon	fabric
gasa de seda fina	fine silk chiffon	fabric
gasa labrada	decorated or painted chiffon	fabric
gato montes	wild cat	local merchandise
género de pande	??	fabric
género para pantalon	fabric for pants	fabric
gentiame	??	medicine
gerga	coarse woolen cloth	fabric
gingham	gingham	fabric
golas	collars	clothing
golas de muselina	muslin collars	clothing
golas de punto	knitted collars	clothing
goma	glue, eraser	household
goma gluta	??	household
gorras	caps	clothing
gorras de hombre	men's caps	clothing
gorras de Panamá	caps from Panana	clothing
gorritos	little caps	clothing
gorritos aplomados	little caps??	clothing
gosnes	hinges	household
gosnes de puerta	door hinges	household
gros	??	fabric

Spanish Name	English Name	Category
guantes	gloves	clothing
guantes de cabrito	suede gloves	clothing
guantes de gamuza	kid gloves	clothing
guantes de lana	woolen gloves	local merchandise
guantes de medio brazo de seda	silk elbow gloves	clothing
guantes de seda	silk gloves	clothing
guardas de reloj	watch guards	personal
guarnición	edge, facing, flounce	fabric
gurbias [formón de forma de media caña]	??	tool
hachas	axes	tool
haletias	??	??
harmónica	harmonicas	musical instrument
harmónicas para niños	children's harmonicas	musical instrument
hebillas	buckles	personal
hebillas de bronce y acero	bronze and steel buckles	personal
hebillas de cinturón	belt buckles	personal
herraduras de latón para los zapatos	brass plates for shoes	personal
herramientas de ojalatería	silver-plating tools	tools
hickory para camisas	fabric for shirts	fabric
higos	higos	food
hilillo (libras de)	fine thread	household

Spanish Name	English Name	Category
hilo (libras de)	thread	household
hilo de algodón	cotton thread	household
hilo de bordar	embroidery thread	household
hilo de cáñamo	hemp thread	household
hilo de carretilla	spool thread	household
hilo de cuentas	string for beads?	household
hilo de encaje	lace thread	household
hilo de lino	linen thread	household
hoces	sickles	tool
hoja de cabador	digging blade?	tool
hormillas	buttonmoulds	household
hormillas de hueso	bone button moulds	household
horquillas	hairpins	personal
imperial	??	fabric
imperial esmerado	¿?	fabric
indiana (tela de algodón pintada por un lado)	printed calico	fabric
indiana corriente	common calico	fabric
indiana fina	fine calico	fabric
indiana ordinaria	poor quality calico	fabric
indiana regular	common calico	fabric
indianilla	calico, linen or cotton cloth printed in colors in one side only	fabric
indianilla francesa	French calico	fabric
instrumento para	instrument to keep	tool

Spanish Name	English Name	Category
guardar del polvo	the [gun] powder	
irlanda	fine linen	fabric
jabón	soap	household
jabón fino de uso	fine soap	personal
jaboneras de barba	soap dish for shaving	personal
jalapa	??	??
jarabe	syrup for cough	medicine
jarros de ojalata	tinplate jars	household
jerga	coarse woolen cloth	local merchandise
jeringas de estaño	syringes made of tin	household
jeringas para caño de hombre	some type of syringe for men	personal
jeringas para caño de mujer	some type of syringe for women	personal
Jesucristo	statue of Jesus	religious item
joquillas finas	??	personal
juego de medidas	measurement set	household
lámpara	lamp	household
lana de castilla	wool from Castille	fabric
lana de Castilla fina	high quality wool from Castille	fabric
lancetas	lancets	tool/household
lancetas de muelle	spring lancets	tool/household
lanilla	fine woolen fabric	fabric
lapiceras de plata	silver pens	personal/household
lapiceros de plata	silver pens	personal/household

Spanish Name	English Name	Category
lapiceros plateados	silverplated pens	personal/household
lápices	pencils	personal/household
lápices de bronce	bronze pencils	personal/household
lápices de plata	silver pencils	personal/household
lápices de plomo	lead pencils	personal/household
lapis	pencils, lapis lazuli?	personal/household
laudano (redomitos de)	opium vials	medicine
lentes	glasses, magnifying glasses	personal
lentes de cristal	crystal lenses	personal
leva	frock coat	clothing
leva de casineta de invierno	winter rock coat made of casineta	clothing
leva de merino negro	frock coat made of black merino	clothing
leva de paño	frock coat made of woolen cloth	clothing
leva de paño azul	frock coat made of blue woolen cloth	clothing
leva fina	high-quality frock coat	clothing
librete	small notebook	books
libros de misa	mass books	religious item
libros en blanco	empty notebooks	books
libros impresos	printed books	books
libros primeros de niño	libros primeros de niño	books
libros segundos	secondary books	books

Spanish Name	English Name	Category
libros terceros	tertiary books	books
lienzo	linen	fabric
limas	files	tool
limas de herrero	blacksmith's files	tool
limas redondas	round files	tool
limonel	??	??
lino	linen	fabric
linón	lawn	fabric
linón bordado	embroidered lawn	fabric
linón chispado	lawn with sparks??	fabric
linón labrado	painted or embroidered lawn	fabric
listado	striped cloth	fabric
listón	narrow ribbon	fabric
listón de pescuezo	ribbon for the neck, wrap	fabric
listón entorchado	ribbon twisted with silk	fabric
llaves de barril	barrel's keys	household/tool
llaves de carabina	carbine's keys	tool
llaves de reloj de acero	steel watch keys	personal
llaves de reloj de latón	tin watch keys	personal
llavitas de reloj	small keys to wind clocks	household/personal
luciferes	matches	household
macedonia	some kind of fabric	fabric

Spanish Name	English Name	Category
macias	??	??
magnesia	magnesium	medicine
mahon	nankeen	fabric
mahon de Inglaterra	English mahon	fabric
mana	??	??
mandarín	??	??
manejeros	??	??
mangas	sleeves	clothing
manta	coarse cotton fabric	fabric
manta de carra	type of manta	fabric
manteca	butter	food
manteles trigueños de adornado	tablecloths for decoration	household
marmajes	??	??
martillos encabados	hammers with handles?	tool
mascada	men’s silk scarf	clothing
mascadas de burato	scarves of burato	clothing
mascadas de colores	colored scarves	clothing
mascadas de mano	hand scarves	clothing
mascadas negras corrientes	common black scarves	clothing
mechas de lámparas	lamp wicks	household
medallas	medals	religious item
medias botas hechas en el país	half boots made in the country	clothing
medias de algodón	cotton stockings	clothing

Spanish Name	English Name	Category
medias de calcetilla	some type of sock	clothing
medias de hilera	stockings made of fine yarn	clothing
medias de hilo	linen stocking	clothing
medias de lana	wool socks	local merchandise
medias de seda	silk stockings	clothing
medidores de cinta	tape to measure ribbon	household
merino	cloth made from merino wool	fabric
moldes para hacer velas	molds for making candles	household
molinito para café	coffee mill	household
molino de fierro para el maíz	iron corn mill	household
monteras	cloth caps	clothing
mostaza	mustard	food
mueble de madera para lavarse	wooden basin for washing	household
mueble secretario para escribir	writing table	household
muletilla (cajita de)	muletilla (cajita de)	??
muñecas	dolls	toy
muselina	muslin	fabric
muselina de fundación	some kind of muslin	fabric
muselina de fustón	some kind of muslin	fabric
muselina labrada	figured muslin	fabric
muselina pintada	painted muslin	fabric

Spanish Name	English Name	Category
naguas	pettycoats	clothing
navajas de barba con estuche	razors with their cases	personal
navajas de bolsa	pocket knives	personal
navajas de bolsa con cuchara y tenedor	pocket knives with fork and spoon	personal
navajas de dos cuchillas	folding knives with two blades	personal
navajas de muelle	switch blade	personal
navajas de niño	Children's pocketknives?	personal
nudos de ventanas	??	??
nuez moscada	nutmeg	food
nutria	nutria hides	local merchandise
obleas	wafers??	food
olan (filol de)	??	??
olancillo?	??	??
ollas	cooking pots	household
ollas chicas	small pots	household
ollas grandes	big pots	household
opio	opium	medicine
organdón	organdy	fabric
oropel	??	??
orquillas	hair pins	personal
ovillos de hilo	thread spools	fabric
palas de embrollar	some type of shovel	tool
palas de fierro	iron shovels	tool

Spanish Name	English Name	Category
palmarin	??	??
palos de asentar	wooden trays where things are laid	household
pana	velveteen	fabric
panilla	velveteen	fabric
panueletas	shawls	clothing
paño	cloth	fabric
paño de primavera	medium weight cloth?	fabric
paño de verano	light weight cloth	fabric
pañueletas de barage	shawls of barage	clothing
pañueletas de gasa	gauze shawls	clothing
pañueletas de jackson	shawls of Jackson	clothing
pañueletas de seda	silk shawls	clothing
pañuelos	handkerchiefs	clothing
pañuelos corrientes	ordinary handkerchiefs	clothing
pañuelos de algodón	cotton handkerchiefs	clothing
pañuelos de barege	handkerchiefs of barege	clothing
pañuelos de bolsa	pocket handkerchiefs	clothing
pañuelos de lana	wool scarfs	clothing
pañuelos de madras	madras handkerchiefs	clothing
pañuelos de pescuezo	neck scarfs, bandanas	clothing

Spanish Name	English Name	Category
pañuelos de yerba	??	clothing
papel	paper	household/personal
papel de cartas	paper for letters	personal
papel de estraca	brown paper	household
papel de rastrada	tracing paper	household
papel estampado	paper with printed designs	household
papel para cuentas	accounting paper	household
paraguas	umbrella	personal
paraguas de algodón	cotton umbrella	personal
paraguas de seda	silk umbrella	personal
paraguitas para nino	small umbrella for children	personal
pasas	raisins	food
peines blancos	white combs	personal
peines de bolsa	pocket combs	personal
peines de cuero	leather combs	personal
peines de madera	wooden combs	personal
peines de marfil	ivory combs	personal
peines de palo	wooden combs	personal
peines demarcadores	some sort of comb	personal/tool?
peines desenredadores	disentangling combs	personal/tool?
peinetas	combs for hair-decorative	personal
peinetas de cuerno	horn combs	personal
peinetas de cuero	leather combs	personal

Spanish Name	**English Name**	**Category**
peinetas para chinos	combs for ??	personal
peinetitas	little combs	personal
pelotitas de hilos	balls of thread	household
peperminta	peppermint	food
pepitorias	Candy made from black sugar and pumpkin seeds	local merchandise
percal	percale	fabric
percal abercado	some type of percale	fabric
percaleras	??	??
perlas (mazos de)	pearls	personal use/jewelry
perpetuela	some kinds of fabric	fabric
picaportes	door knobs, thumb latch	household
picardia	some kinds of fabric	fabric
picheles de china ornada	mugs of ornate china	household
pichelitos de loza francesa	small mugs of French china	household
pichelitos de niña	children's mugs	household
piedras de chispas	flint stones	tool
piedras de escopeta	flint stones for shot guns	tool
piedras para afilar navajas	sharpening stones for pocket knives	tool
piel de rata	woodrat fur/skin	local merchandise
piel de tusa	prairie dog fur/skin	local merchandise

Spanish Name	English Name	Category
piel del diablo	devil’s hide, a type of cloth	fabric
pilas	??	??
píldoras (cajas de pildoras)	pills	medicine
píldoras sifilíticas	pills to treat syphilis	medicine
pimenteros de ojalata	tin pepper dispensers	household
pimentón	red pepper	food
pimienta	peppermint	food
pinzas	pincers, tongs	tool
piñón	pinyon nuts	local merchandise
pique	some type of fabric	fabric
pistones	percussion caps	tool
pizarras de piedra	blackboards made of ??	household/tool
plancha	iron	household
planchas de mano	hand iron	household
platillos con sus tazas para café	coffee cups and saucers	household
platones	big plates	household
platos	plates	household
platos de china	plates of China	household
platos de cristal	crystal plates	household
platos de loza francesa	plates of French china	household
platos de ojalata	tin plates	household
platos de vidrio	glass plates	household

Spanish Name	English Name	Category
platos dorados para razurarse	gold-plated plates for shaving	personal
plumas de acero	steel points for writing	household
plumas de avestruz	ostrich feathers	household
plumas para escribir	pens	household
pocillos	chocolate cups, espresso cups	household
polvo de tomar (bottela de)	??	??
polvorines de cobre	copper primers	tool
polvorines de pistola	pistol primers	tool
polvos (botes de polvo)	boxes of powder (it could be a medicine or a cosmetic)	medicine
polvos de seidlets	some type of powder	medicine
polvos de tinta	ink powder	household
polvos salinos	some type of powder	medicine
pontivi	puntevise??	fabric
pozuelitos	saucers	household
princeta	??	fabric
pulseras doradas	gold-plated bracelets	personal
puntilla	narrow lace edging	fabric
punto	knitted	fabric
quimonos	kimonos	clothing
quina? amarilla	yellow ??	medicine

Spanish Name	English Name	Category
quinina	quinine	medicine
quitasoles	parasols	personal
rajas? de herrero	blacksmith's tool for splitting	tool
ramillas	small branches??	??
ramos	clusters??	??
raso	satin	fabric
raspa	file, scraper	tool
rayadillo	striped cotton duck	fabric
rebocillo	small shawl	clothing
rebocitos de nina	shawls for girls	clothing
rebozos	shawl	clothing
rebozos de seda	silk shawls	clothing
redomas de agua colonia	flasks for perfume	personal
redomitos para perfumes	little flasks for perfume	personal
regalu	??	??
regla pie de rey	ruler	household/tool
reglas de carpintero	carpenter's ruler	tool
rejilla	lattice	fabric
relojes de sala	large clocks	household
relojes de sala corrientes de madera	common wooden clocks	household
relojes de sala de metal	large clocks made of metal	household
relojitos de juguete	toy clocks	toy

Spanish Name	English Name	Category
relojitos de sol	sun clocks	household
rengue	??	??
retratos de santos	portraits of saints	religious item
romanas	scales	household/tool
rompecoche	¿?	fabric
rosarios negros	black rosaries	religious item
rubarbo	rhubarb	food
sabanilla	fabric	local merchandise
sacadores de licores	corkscrews	household
sacatrapos de fusil	instrument to clean barrels??	tool
sal carcántica	some form of salt	medicine
salero	salt shaker	household
saleros de cristal	crystal salt-shaker	household
salvaderas de ojalata charoladas	tin spitoons	household
sangalete	??	fabric
Santo Nino de Atocha	Saint	religious
sapias	??	??
saquito	small sack	household
sarapes	shawl or blanket worn as an outer garment	clothing
sarapes atilmados	some type of sarape	local merchandise
sarapes de labor	some type of sarape	local merchandise
sarapes entrefinos	fine quality sarapes	local merchandise
sarguilla	??	fabric

Spanish Name	English Name	Category
satín	satin	fabric
satinete	some type of satin	fabric
sayal	coarse woolen cloth	local merchandise
sayasaya	Type of Chinese silk that came from Indonesia	fabric
sebos de fulminante	explosives??	tool
seda	silk	fabric
seda de cuerpo	??	fabric
seda torzal? (madejas de)	??	fabric
seguillas (papel de)	??	??
sellos para reloj	seals for watches or clocks	household
sempiterna	some type of fabric	fabric
senne	??	medicine
serafina	flowered woolen fabric	fabric
serruchitos	little saws	tool
serruchos	saws	tool
servilletas	napkins	household
sinagomme	??	medicine
sincerros	??	??
sobrecamas	bedspread	household
sobremesitas	napkins, small tablecloth	household
soda	??	??
sombreros de paja	straw hat	personal

Spanish Name	English Name	Category
sombreros en corte hechos en el pais con sus correspondientes aderezos	hats	personal
sombreros mejicanos	Mexican hats	personal
soquillitas (de chaquira)	bags of beads	trade item
sulfato de quinine	quinine	medicine
tachuelas	tacks	household/tool
tafetán	taffeta	fabric
taladro	drill, auger	tool
tapones de botella	bottle stoppers (corks)	household
tapones de corcho	cork stoppers	household
tapones de redoma	flask stoppers	household
taromético	??	medicine
tarros	jars	household
tazas grandes para té	large tea cups	household
tazas para café	coffee cups	household
té	tea	food
tejidos	knitted items	clothing
tela de alambre	wire mesh	household
tenazas	tongs	tool
tenazas para agujerear	tongs to make holes	tool
terciopelo	velveteen	fabric

Spanish Name	English Name	Category
terciopelo labrado	sculpted velvet	fabric
termómetro	thermometer	household
testamento	Old Testament, Bible	book
tetera	teapot	household
tijeras	scissors	household
tijeras con navajas	scissors with razors	household
tijeras de corbata	some type of scissors	household
tijeras para trasquilar	shearing scissors	tool
tijeritas	little scissors	household
tilmas	??	local merchandise
timones de arado	beams of ploughs	tool
tinta	ink powder	household
tinta colorada	red ink	household
tinta en polvo (paquetes de polvo de tinta)	powdered ink	household
tinta para escribir negra	black ink	household
tinteros	inkstands	household
tinteros de corcho	cork inkstands	household
tinteros de pizarra con salvadera	inkstands for blackboards??	household
tirantes	suspenders	clothing
tirantes de elástico	elastic suspenders	clothing
tocadores con espejo	vanities with mirrors	household

Spanish Name	English Name	Category
tocino	bacon	food
tornasolada	iridescent	fabric
tornasolada de seda	some type of fabric	fabric
tornillos	screws	tool
tornillos de cortina	curtain screws	tool
tornillos para las herraduras	screws for horseshoes	tool
tramas para cerraduras	??	tool
trampitas ratoneras	mousetraps	tools
trementina (espiritu de)	turpentine	household
trencilla	braid	fabric
tripenacas	??	??
tripilla	??	??
trompas	??	??
trompitas	??	??
troyana	some type of fabric	fabric
túnica de algodón	cotton tunic	clothing
túnica de barege	barege tunic	clothing
túnica de batista	cambric tunic	clothing
túnica de caranchanes	tunic of caranchanes	clothing
túnica de carranclan	calico tunic	clothing
túnica de muselina	muslin tunic	clothing
túnica de sarga	tunic made of serge	clothing
unguento mercurial	unguent made with mercury	medicine

Spanish Name	**English Name**	**Category**
unguento vegigatorio	bladder oinment	medicine
urecillo	some type of fabric	fabric
vasos de cristal	crystal glasses	household
vasos de estaño	tinplated glasses	household
vasos de metal blanco	white metal glasses	household
vasos de ojalata pintada	painted tinplated glasses	household
vasos largos de champagne	long champagne glasses	household
velas	canfles	household
velas de cera	candles made of wax	household
velas de esperma	sperm candles	household
velduque (belduque)	large pointed knife used by French trappers	tool
velos	veils	clothing
velos de gasa	gauze veils	clothing
velos de punto	veils made of knitted material	clothing
velpa	some type of fabric	fabric
vengala (bengala)	fireworks, Bengal light	household
vidrios de reloj	watch glasses	personal
vidrios de ventana	window panes	household
vinagrera	cruet	household
violín	violin	musical instrument

Spanish Name	English Name	Category
violines corrientes	common violins	musical instrument
vírgenes doradas	gold plated statues of the virgin	religious item
yerbabuena (esencia de)	medicinal herb	medicine
zangala	??	??
zangaleta	??	??
zapatos de algodón	cotton shoes	clothing
zapatos de algodón de niña	girls cotton shoes	clothing
zapatos de barage	shoes of barage	clothing
zapatos de burato	shoes made of burato	clothing
zapatos de casimir	cashmere shoes	clothing
zapatos de cuero	leather shoes	clothing
zapatos de figura	some type of shoe	clothing
zapatos de gasa	gauze shoes	clothing
zapatos de hilo	linen shoes	clothing
zapatos de Jenaffe y Mandarin	some type of show	clothing
zapatos de macedonia	shoes made of macedonia	clothing
zapatos de valencia	shoes made of valencia	clothing
zaraza	calico, chintz	fabric
zarcillos (pares)	earrings	personal use/jewelry
zarzaparrilla (fluido)	sasparilla	food

Santa Fe Trade *Guias* List of Questionable Items

The following are trade items not specifically identified in Dr. Boyle's original *guias* list. Those in bold and containing sources are my attempt to speculate as to the product that went to Santa Fe.

aravias de algodon

Azúcar de Plomo (Most likely sugar of lead)

http://cultureofchemistry.fieldofscience.com/2009/06/sweet-leads.html

https://medical-dictionary.thefreedictionary.com/sugar+of+lead

balas de pavio

Bandas de Burato

http://www.spanishdict.com/translate/burato

Bandas para eluso (common, everyday sashes)

barege

barinetas

Bayena

belfa

bercarrador

bercuas

bidacos graduados

bogota

bombayata

Boslán

Bretana de Toland

bueles

cachon

Cálamo (Quill) (See Trade Goods Household/ Pens)

Caletillab

caranchanes

ceralson

cercassian

cerenture de colonel

Chali de Cortes (Most likely shaw) (See Trade Goods Clothing)

www.spanishdict.com/translate/chali

charalos

chinitos

chinos para mujer

circacia

Cola Libras de Cola (More likely *'libras de cola"*-pounds of cola)

http://entheology.com/plants/cola-acuminata-nitida-cola-tree/

coletilla de cánamo

coletilla de holanda

Cordoncillo de Cantón (Most likely a medicinal plant)

www.unido.org/fileadmin/import/58569_medicinal_final.pdf

www.retreatayahuasca.com/Ethnobotanique/cordoncillo.htm

www.rainforestcruises.com/jungle-blog/top-10-medicinal-plants-of-the-amazon

cotín

ctuacales de Hoja de Lata (Most likely tin or tinplate) (See Trade Goods, Household/ Tin)

www.spanishdict.com/translate/hojalata%20or%20hoja%20de%20lata

www.collinsdictionary.com/dictionary/spanish-english/hoja-de-lata

Epecacuana (Most likely the medicinal,ipecac)

https://medical-dictionary.thefreedictionary.com/ipecac

escochipilan

Espirit de Mitre (Most likely Espirit of Nitre)

www.finishing.com/324/13.shtml

http://householdphysician.com/chapter28.php?page=14

http://chestofbooks.com/health/materia-medica-drugs/Treatise-Therapeutics-Pharmacology-Materia-Medica-Vol2/IV-Spirit-Of-Nitrous-Ether-Spiritus-aetheris- Nitrosi-Swee.html

Espirit de Nitro (Most likely spirit of nitrous used in medicine)

www.finedictionary.com/Spirit%20of%20nitrous%20ether.html

https://pubs.acs.org/subscribe/archive/mdd/v05/i05/html/05r2r.html

estuche

etangavillas

ferlin

filleras

franqueritas

gagon

gamiel

Gurbias formón de forma de media caña (Most likely a rounded shaped gouging tool carpentry and lathe work)

www.youtube.com/watch?v=-6XHcxeOb-U

haletias

imperial

imperial esmerado

joquillas finas

Limonel

macias

mana

Mandarín (Most likely Damask) (See Trade Goods, Fabric/ Damask)

manejueros

marmajes

muletilla (cajita de)

Nudos de Ventanas (Most likely window and door protection knots)

www.youtube.com/watch?v=zb5u4uHU7v4

olan (filol de)

olancillo

Oropel (Most likely a fabricated sheet of metal or pyrite.)

https://translate.google.com/translate?hl=en&sl=es&u=https://es.thefreedictionary.com/oropel&prev=search

http://lexicoon.org/es/oropel

palmarin

Panuelos de Yerba (Herbal handkerchief)

http://elsayon.blogspot.com/2011/08/el-panuelo-de-yerbas-y-la-pandorga.html

http://cronicasdetalavera.blogspot.com/2016/01/el-panuelo-en-la-indumentaria-masculina.html

Peinetas para Chinos (Chinese combs) (See Trade Goods, Personal/ combs)

Percaleras (Most likely Percals) (See Trade Goods, Fabric/ Percal)

https://translate.google.com/translate?hl=en&sl=es&u=https://es.thefreedictionary.com/percales&prev=search

pilas

polvo de tomar (botello de)

Princeta (Most likely Princetta) An English worsted fabric made with silk warp and worsted filling.

https://en.oxforddictionaries.com/definition/princetta

Harmuth, Louis **Dictionary of textiles**, Fairchild Publishing, New York, 1915. Accessed from: https://books.google.com/books?id=LVEhAAAAMAAJ&pg=PA127&lpg=PA127&dq=princetta+fabric&source=bl&ots=mX7mNezYo-&sig=JCwKQuJxmBsN-dW3xfxeerlKmsg&hl=en&sa=X&ved=0ahUKEwjfheiPhbzXAhVplVQKHbmmCN0Q6AEIVzAM#v=onepage&q=princetta%20fabric&f=false

ramillas

ramos

Regalu

rengue

Rompecoche (Most likely fabric): A kind of wool from China

Joseph, Gilbert M., Henderson, Timothy J. (Editors), The Mexico Reader: History, Culture, Politics, Duke University Press, Durham and London, 2001. Accessed from: https://books.google.com/books?id=p1PVxAwz32oC&pg=PA173&lpg=PA173&dq=rompecoche+cloth&source=bl&ots=OoBg3c6FAK&sig=_0CYhKJ5MO8N3yivTABrwJgpnpM&hl=en&sa=X&ved=0ahUKEwi5_5bKirzXAhVT-2MKHez1ANQQ6AEIgwEwAA#v=onepage&q=rompecoche%20cloth&f=false

Sangalete (Most likely fabric): A silk fabric with patterned with weft designs

http://www.academia.edu/28664845/Textile_Production_and_Use_at_Mission_San_Diego_de_Alcala_1769_1834

sapias

Sarguilla (Most likely a serge fabric): A wool mixed with cotton or other vegetable fiber.

Monthly Bulletin (Bureau of the American Republics) Washington, DC, December 1893. Accessed from: https://books.google.com/books?id=3LxmAAAAMAAJ&pg=RA6-PA36&lpg=RA6-PA36&dq=sarguilla+fabric&source=bl&ots=MyZMAq5hgE&sig=5i8Kyfk5buEzBkN9wSuBfPy9WUo&hl=en&sa=X&ved=0ahUKEwj9-Mrzj7zXAhUW0WMKHWqLARcQ6AEILDAA#v=onepage&q=sarguilla%20fabric&f=false

Seda de Cuerpo (Having to do with silk fabric)

Seda Torzal (madejas de) (Most likely *madejas de seda torzal*) Twisted skeins of silk. (See Trade Goods, Fabric/ Silk)

seguillas (papel de)

Senne (Most likely *senna*) A laxative made from one of 200 species of *Cassia Senna*. It was developed by a Georgia doctor in 1840 and named Black Draught.

www.traditionalmedicinals.com/plants/senna/

www.chattem.com/about03.asp

sinagomme

sincerros

Soda (Most likely sodium bicarbonate or soda ash)

https://articles.mercola.com/sites/articles/archive/2012/08/27/baking-soda-natural-remedy.aspx

http://www.ansac.com/products/about-soda-ash/

taromético

tilmas (*Nahuatl* word) (A cotton or wool blanket worn by poor peasants)

tramas para cerraduras

Tripenacas

tripilla

trompas

trompitas (Possibly small tools)

zangala

zangaleta

CHAPTER FOUR

Transportation of Products

Trans-Atlantic and Pacific

Supply chains are inherently dependent on the means by which resources are conveyed to producers and finished products transported to consumers. During the period 1821 to 1860, water was the primary medium for the transportation of foreign goods. Once in the United States, both land and water routes were utilized. European and American companies and commercial agents contracted with sailing ship owners to transport goods from various parts of the world to the United States. Once in US ports, the companies and agents contracted to have product freighted west by land, canal, and eventually rail. They employed smaller types of vessels to transport the goods down the Ohio to the Mississippi and Missouri or north from New Orleans.

After the Napoleonic Wars (1799-1815) which included the American War of 1812, both the British and American merchant fleets greatly expanded. The British shipping industry dominated the transport of goods. However, between 1815 and 1860 world shipping experienced a technological revolution in the size, structure, speed, and tonnage of ships. By the end of the period, the United States emerged as a shipping leader.[18] The early period was known as the 'Golden Age of Sail'. London dominated the shipping and ship building industry well into the 1830s. The construction of large Atlantic trade ships was the business of Thames ship builders for many decades.[19]

The traditional vessel for Trans-Atlantic shipping through the 1820s was the *barque* ('bark'). The British Navy used this term to describe any vessel that did not fit into a usual category. It was a general name for small broad stern ships with three masts and no stern or prow ornamental figures.[20] This type of vessel with a cargo capacity of about 340 tons was used in Trans-Atlantic trade by both European and

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[18] George Rogers Taylor*, "*The Transportation Revolution 1815-1860"*, Vol IV, The Economic History of the United States* (New York: Rinehart and Co.,1951), 104.

[19] Robert Gardnier, (ed), *The Hayday of Sail: The Merchant Sailing Ship 1650-1830,* (UK: Conway Marine Press, 1995), 19.

[20] William Falconer, ***An Universal Dictionary of the Marine, or, a Copious Explanation of the Technical Terms and Phrases employed in the Construction of a Ship,*** (London: Thomas Cadell, 1780 edition), 113. http://southseas.nla.gov.au/index_reference.html

American shippers. Prior to 1820, the owners of these vessels waited until cargo assignments filled the hold before leaving port. This could take days or even weeks. Because there were no established schedules, sellers and any passenger with a booking had to wait until the ship was ready to sail.[21]

British ports were established by acts of Parliament. The primary British ports during the early 1800's were London (Billingsgate), Glasgow, Liverpool, and later Southampton. By 1824 the docks at Liverpool extended to fifty acres and continued to grow.[22] Although France did not carry on as much trade with the United States, goods arrived on similar types of ships from the French ports of Bordeaux, Nantes, Marseille, and Rouen-Le Harve.[23]

The first major Trans-Atlantic transportation development after 1820 was the establishment of the 'Trans-Atlantic Packet'. The term 'packet' was used as early as the 16th century to denote a ship that carried mail referred to as the *packette*. The Packet ship, packet liner, or simply the packet was a new development because they departed from ports on regular schedules.[24] A group of New York businessmen is credited with establishing the first regularly scheduled packet. Recognizing the demand for a regular cargo and passenger schedule, they advertised schedules for their four New York built, three-masted 110 foot long, 400 ton cargo ships. The first two ships sailed in January 1818. The large black ball painted on the fore topsail identified it as the 'Black Ball Line'.[25] New York held an initial advantage over Philadelphia and Baltimore because it developed an auction system for disposing of imports and created US coastal packet shipping schedules.[26] These Trans-Atlantic ships eventually averaged 23 days from New York to Liverpool and 40 days back to New York during the first ten years.[27]

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[21] http://americanhistory.si.edu/

[22] www.parliament.uk/about/living-heritage/transformingsociety/tradeindustry/importexport/overview/ports/

[23] www.oxfordbibliographies.com/view/document/obo-9780199730414/obo-9780199730414-0110.xml

[24] http://history1800s.about.com/od/1800sglossary/g/packetdef.htm

[25] Stephen Fox, *Transatlantic: Samuel Cunard, Isambard Brunel, and the Great Atlantic Steamships* (New York: Harper Collins, 2003). 4.

[26] Taylor, 7.

[27] www.gjenvick.com/SteamshipLines/BlackBallLine/1912-TheStoryOfTheBlackBallLine.html#axzz4OEFukEOh

By 1824, the 'packet line' concept gave rise to competition. More ships were under construction and more lines were sending sailing vessels to Europe. American ship builders and shippers (particularly in New England) were advancing so quickly that a British Parliamentary inquiry reported in 1837 that the American ships were superior to the British.[28] By 1845, fifty-two packets were regularly sailing between New York and Europe.[29] The supply chain concept of **S**pace **T**ime **C**onvergence was compressing.

Early Steam Power

Even before changes in ship architecture (design) and the increase in the number of sailing ships in the 1820s, the development of steam power by James Watt (1736-1819) contributed to the rise to the Industrial Revolution. Initially used in the mining industry for pumping water out of mines, steam was quickly adapted to coastal and interior water transportation in Europe and the United States. The first open ocean use of steam occurred in May of 1815 when the *Glasgow* left the Firth of Clyde (Scotland) and headed first to Dublin and then on to London. After experiencing daunting weather and tides, the 760 mile test was concluded when the *Glasgow* reached London in three weeks. Unfortunately it was under sail for 121 hours of three weeks. Burning two tons of coal every twenty-four hours, having little space for coal storage, and the absence of coaling stations between England and the US, proved that Trans-Atlantic steam transportation was decades away.[30]

American steamship builders faced similar issues when it came to ocean going vessels. John Fitch, in the presence of members of the Constitutional Convention, launched his steam powered vessel on the Delaware River on August 22, 1787. In 1802 Robert Fulton constructed a steamboat for use on the Hudson River.[31] Adapting steam for local water transportation was easier than integrating steam technology into ocean going vessels. Designing iron parts into wooden ships was a challenge. Hulls had to be highly reinforced to withstand tossing and wrenching at sea. The entire configuration of the vessel was a challenge given the initial side-wheeler design. Early boiler technology was not always safe and sometimes they blew under pressure in both ships and locomotives.

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[28] Ralph D. Paine, *The Old Merchant Marine: A Chronicle of American Ships and Sailors* (text book edition), Allen Johnson (editor) (New Haven: Yale University Press), 1919), 139.

[29] Taylor, 106.

[30] Fox, 29-31.

[31] www.globalsecurity.org/military/systems/ship/steam3.htm

The *Savannah* was American's first attempt of Trans-Atlantic steam. The 350 ton *Savannah* was originally built in New York as a sailing packet ship. It was later fitted with a side paddle wheel and on May 24,1819 steamed out of port in Savannah, Georgia on its way to Liverpool, England.[32] The Trans-Atlantic trip was made in twenty-seven days. Although recognized as the first to successfully cross the Atlantic, it was under steam for only eighty hours of the 648 due to running low on coal.[33] Numerous logistical and engineering issues, along with the comparative cost of sail vs. steam, left sailing the most profitable means of transportation in the supply chain for several decades.

Eventually Trans-Atlantic steam shipping became a reality but still not economically viable as contrasted to sailing ships. First attempt to achieved this reality included the 1838 journey of the 1,340 wooden paddle wheeler *Great Western* from Bristol to New York in 15 days and the smaller steamship *Sirius* arriving hours ahead.[34]

In 1840, service between England and America began with the launch of the British Cunard Line wooden paddle wheeler *Britannia*. It left Liverpool for Halifax and Boston on July 4 and arrived in Boston on the 18th. The elapsed time was one-third that of sailing packets. The *Britannia* was 207 feet long and was powered by a 403 hp engine. This means of transport was preferred by passengers over cargo ships.[35]

Clipper Ships

The concept of a clipper ship existed well before the 'Age of Clippers' (1840-1870). The name most likely came from the British use of the verb 'clip', denoting a fast movement of animals. It was later associated with a ship that could 'clip' through the waves as contrasted to plowing through. The French built clipper type ships as early as 1800 in Normandy and Brittany.[36] The use of the term continued in New England as slang denoting a boat or ship that could go at a 'good clip'. Prior to the

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[32] www.todayingeorgiahistory.org/content/ss-savannah

[33] Taylor, 113-114.

[34] Warren Tute, *Atlantic Conquest: The Men and Ships of the Glorious Age of Steam*, (Boston: Little, Brown, and Company, 1962), 22-23.

[35] Fox, xii.

[36] http://starclippers.co.uk/early-history-clippers-opium-people-tea.html

War of 1812, swift 'clipper-like' ships were built in Baltimore on the Chesapeake Bay. They became known as Baltimore Clippers.[37]

The first ocean going clippers evolved out of the British trade in the East (China and India). The British East India Company originally dominated trade with the East from the 1600s to 1830. Their ships (East Indiaman) were large and very slow. They sailed from England in January, arrived in China in September, and sailed back to England by the following September. They were never in a hurry because they enjoyed a monopoly and could afford to wait on departures until the hulls were full. Regardless of the schedule, good profits always followed. But, that status ended in 1834 when their monopoly ended and competition arose.[38]

The new objective was speed and delivery- definitely a supply chain management goal. The importation of Chinese tea and spices to England and the British exportation of opium from India to China gave impetus to the design and construction of swifter moving vessels. The first British clipper (*Scottish Maid*) was built in 1839 in Aberdeen. The builders hoped it would compete with the side paddle steamers. By 1842 numerous British clippers were built and in competition with American traders in the opium, tea, and spice trade.[39]

America had limited trading relations with China and the east as far back as 1784. A variety of trading vessels were used in the trade. An early noteworthy sail was made by captain Robert Waterman who in 1845 came back to New York from Macau in 78 days.[40] Canadian born Donald McKay set up a ship building site in Newburyport, Massachusetts in 1841 and in 1845 moved it to East Boston. Between 1842 and 1869 he built thirty-eight clippers for British and American shipping interests.[41] He is best known for his clipper ship the *Flying Cloud* that in 1854 sailed from New York to San Francisco in 89 days. American clippers gained a great advantage over their British competitors when in 1849 Britain allowed Americans to carry tea from China to England. The swift American clippers demanded higher rates for their speed of delivery.[42]

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[37] Clark, Arthur Hamilton, *The Clipper Ship Era; An Epitome of Famous American and British Clipper Ships, Their Owners, Builders, Commanders, and Crews, 1843-1869* (New York G. P. Putnam's Sons, 1910), 57.

[38] www.tea.co.uk/tea-clippers

[39] Clark, 58.

[40] Glenn A. Knoblock *The American Clipper Ship 1845-1920: A Comprehensive History With a Listing of Builders and Their Ships* (Jefferson, North Carolina: Mc Farland and Company, Inc., 2014), 11.

[41] John Howard Brown (ed), *Lamb's Biographical Dictionary of the United States,* Vol. 5 (Boston, MA: Federal Book Company), 257. https://archive.org/details/lambsbiodic06browrich

By the 1850s, the decline in travel time across the Atlantic and Pacific due to technological innovation created a better **S**pace **T**ime **C**onvergence (Compression) number. Greater speed and efficiency resulted in greater profit and even greater demand for products.

Space **T**ime **C**onvergence[43]

Ships (regular sail)

1818-1828

New York to Liverpool	about 23 days
Liverpool to New York	about 40 days

1848-57

Liverpool to NY	about 35 days

Clipper Ships

1845

California to East Coast Ports	110+ days

1854

New York to West Coast	89+ days

Trans-Atlantic Steam

1840

Liverpool to Halifax to Boston	14 days

1860

England to US	10 days or less

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[42] Taylor, 111.

[43] Ibid., 145-146.

American Coastal and Inland Water Transportation

Until the early 1800s the movement of goods along the East Coast was primarily conducted by sloops (one mast), ketches (two masts and one small mast in front of rudder), and small rigged vessels. These vessels were all handled from the deck. The sloop was long time popular coastal trading vessel at 25 tons to 100 tons. But the schooner at 75-175 tons replaced the sloop by the 1820s.[44]

Inland water transportation was the primary mode of moving goods because American roads were very poor or non-existent. The types of inland water vessels were more varied than ocean going ones. Anyone standing along the Monongahela, Alleghany, Ohio, Mississippi, Tennessee, or Missouri rivers in 1820 would have witnessed a myriad of water going vessels ranging from rafts, canoes, pirogues (long hollowed out tree trunk), arks, barges, bateauxs (large flat bottomed boats), skiffs (shallow, flat-bottomed open boat with sharp bow and square stern), broadhorns (flat bottom) and keel boats.[45]

Flatboats (broadhorns, arcs, Kentucky boat, and Natchez boat) were the logical choice for downstream hauling in the late 18th and early 19th centuries. Initially they were constructed in Pittsburgh, but as the 19th century evolved, they were built all along Midwestern waterways. At a cost of less than $50, they initially hauled about thirty tons of cargo and reaped good profits at the destination. By the 1820s, the size and loads were upwards to 150 tons of goods.[46] Flatboats could make the journey from Pittsburgh downstream to New Orleans 1,950 miles) in 42 days.[47] At their destination, the cargo was sold. Given the boat's design, purpose, upstream current, and the value of its lumber, there was no economic viability for poling it back upstream. The lumber was sold off for construction projects and the crew stayed on or traveled back up river by land or hired on to a keelboat.

Keelboats (60-70' long and 15' to 18' wide) were especially popular and built for two way travel. When heading up-stream they were propelled by several methods of human power (18-20 men) that included poling along the length of the boat or pulling (cordelling) the boat up-stream from the shore. A small sail could be utilized if wind was available. The worst scenario was rowing.[48] The arduous, human powered, upstream journey from New Orleans to Pittsburgh consumed more than 120 days.[49] Keelboats could carry up to 100 tons of freight and make 15 to 30 miles a day heading north.[50] American steam powered vessels came to dominate coastal and interior waterways by the 1830s. As noted before, the early development of steam engines and steamboat construction in both Europe and America was a hit and miss enterprise but steam prevailed and further reduced the **S**pace **T**ime **C**onvergence (Compression) resulting in reduced time for delivery and greater profits.

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[44] Ibid., 108.

[45] Frank Donovan, *River Boats of America* (New York: Thomas Y. Cromwell Company, 1966), 7.

[46] Robert Gudmestad, *Steamboats and the Rise of the Cotton Kingdom* (Baton Rouge: Louisiana State University,2011), 11.

[47] Taylor, 57.

Space **T**ime **C**onvergence

1820

Pittsburgh to New Orleans	42 days
New Orleans to Pittsburgh	120+ days

American Atlantic Coast Steamboats

The greatest impact of steam in America was first realized along the eastern coast with passenger and freight hauling and on the major rivers of the interior. Robert R. Livingston and Robert Fulton, securing exclusive rights on the Hudson River, introduced steam (The Clermont) in 1807. After the War of 1812, they continued to expand their fleet and New York City became their headquarters. Enterprising businessmen entered steamboat competition and challenged Livingston's and Fulton's rights. Ogden and Gibbons initially purchased rights from Livingston and Fulton but soon fell into personal conflict. Gibbons then competed with Ogden, who hired a young Cornelius Vanderbilt as captain. Gibbons fought against the monopoly of Livingston and initiated a case against Ogden. In 1824, the Supreme Court decided in *Gibbons v. Ogden* that only Congress had the power to regulate interstate commerce. Monopolies were ended and competition increased.

By 1840, there were more than one hundred steam packets on the Hudson River alone. Steamboats on eastern rivers had reached their ultimate size and viability. The *Isaac Newton* typified the size limit. It was 345 feet long, with 39 foot paddles. Its speed, augmented by anthracite coal, moved along at 24mph.[51] Steamboats conveyed both passengers and freight north and south but most famously up the Hudson to Albany where both passengers and goods moved across the Erie Canal which was functioning since 1825. Between 1830 and 1860, Cornelius Vanderbilt created and developed American and Trans-Atlantic steamboat lines, routes and railroads.

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[48] Donovan, 25.

[49] Taylor, 57.

[50] Gudmestad, 12.

[51] Donovan, 76.

Western River Steamboats

The development and use of steam on the Mississippi and its tributaries was more economically dramatic than on the east coast. Given the time, distance, and speed factors for traditional water vessels, steam quickly replaced human and water current powered transportation. The Livingston-Fulton interests sent the first steamboat south on the Mississippi from Pittsburgh to New Orleans in 1811. The 371 ton *New Orleans* operated on the lower Mississippi for several years but never returned up stream. In 1815, *The Enterprise* left its mooring fifty miles north of Pittsburgh on the Monongahela River, traveled to New Orleans and successfully returned. In 1817, seventeen steamboats (3,290 total tons) operated on western rivers and by 1820 the number rose to sixty-nine. The number increased to seven hundred and twenty-seven by 1855.[52]

Western steamboats came in a myriad of shapes and sizes. The need for high powered engines to deal with the south bound currents initially resulted in heavily constructed boats with deep holds and narrow hulls. No nation had a proven tradition of building steamboats. Because of the heavy construction design, freight was limited to 150 or less tons. As steamboats design evolved, broader hulls allowed for greater surface bearing area and the addition of decks (tiers) provided for more freight and passengers. The greatest constant challenges to steam boating were sandbars, snags (trees, debris), and wind. Steamboats usually wore out or wrecked within six years of construction.[53] By the 1840s many boats were capable of moving 400 to 500 tons of cargo. Most steamboats were initially constructed in the east because of the knowledge of eastern shipwrights and the industrial base, but construction commenced in Cincinnati and Louisville in the 1820s.[54]

Navigation and development of towns on the Missouri played a great role in the evolution of the Santa Fe Trail supply chain. The Missouri River, the longest river in the United States, was the focus of attention of Thomas Jefferson and the Lewis and Clark Expedition in 1804. Stephen H. Long proposed a scientific survey and mapping of the river by steamboat in 1817. His proposal was accepted and after the construction of a special steamboat that could withstand the Missouri, Long's 75X13 steamboat *The Western Engineer*, was launched as a stern wheeler from Pittsburgh in May of 1819.

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[52] Taylor, 63-64.

[53] William E. Lass, *Navigating the Missouri: Steamboating on Nature's Highway 1819-1935* (Norman Oklahoma: The Arthur H. Clark Company,2008), 30.

[54] Adam I. Kane, *The Western River Steamboat* (College Station: Texas A&M University Press, 2004), 59-60.

Long's 'expedition' was 'one upped' by the steamboat *Independence*, captained by John Nelson of Louisville, Kentucky. He made the journey in May 1819 from St. Louis, on the Mississippi, up the Missouri to Franklin in thirteen days. His excursion demonstrated the navigability of the Missouri. The success set off an influx of people into the area.[55]

There were three types of steamboat services. Transient services ('tramps') were operated by freelancers with who ran up and down the river looking for work. They had no schedule and acted independently from the packet and line services that later provided regularity to freighters.[56] Missouri Steamboat operations in the 1820s were very irregular. Due to the sparsely populated areas and lack of demand, there were limited runs up the Missouri from St. Louis, but populations gradually increased along the waterway.

Established in 1769 and only 28 miles from the Mississippi, was well populated city of St. Charles. Lewis and Clark stopped there on their expedition in 1804. At one time St. Charles was the capital of the Missouri Territory.

One hundred and fifteen miles (115 miles) further up from St. Charles, sat a small landing and trading area. This town became known as Jefferson City and was designated the capital in 1826 because of its central state location. Fifty-four miles further upstream was Boonville (named after Daniel's sons). Settled in 1810, it became the county seat in 1818.

Franklin was located across the river from Boonville. It was settled in 1818 and was the starting point for William Becknell's Santa Fe Trail in 1821. Rebuilding after a flood in 1827, it became New Franklin. Although 'Old' Franklin was the eastern starting point for the early Santa Fe Trail, Independence, established in 1827 and east of present day Kansas City, evolved into the staging area for immigrants and freighters heading west and to Santa Fe in after 1831.

The decades following 1820 witnessed continued expansion of steam shipping on the Missouri. The St. Louis based, 131 ton side-wheeler *Pittsburgh and St. Louis*

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[55] Lass, 36, 41, 42, 46.

[56] Hunter, 319, 320.

Packet arrived in Franklin in the record time of 77 hours in the spring of 1823.[57] Steamships began the first scheduled service between St. Louis and Fort Leavenworth in 1829. The number of steamships on the Missouri River increased from five in 1831 to twenty-six in 1842, and fifty-five in 1858. Few boats traveled beyond Glasgow which is upriver from New Franklin by 1845. However, by 1855, St. Joseph, five hundred miles further upriver, became the center for steamboat operations on the lower Missouri. With only four steamboat arrivals in 1843 it increased to three hundred and nine in 1855.[58]

Space **T**ime **C**onvergence

1819

St. Louis to Franklin, Missouri (200 miles)	13 days

An interesting aside to the use and expansion of steamboats is the extraordinary consumption of fuel (wood). According to numerous sources used in **Western River Transportation** by Haites, Mak, and Walton,[59] steamboats required hundreds of cords of wood on their journeys down and up the rivers. From this author's experience, a cord of wood measures 128 cubic feet (4'X4'X8') if the wood is perfectly aligned. More likely a cord is between 85-128 cubic feet because of the shape of the cuts. Cheating a customer is easy if the logs are not cleaned well, thus creating extra space between them. Another factor to consider is the type of wood and its heat potential (BTU's). Although a cord is a cord, the weight of a cord depends on the type and BTU value. A pound is a pound, but a pound of oak has more BTU potential than a pound of cottonwood.

In 1818, a 400 ton steamboat took twenty days from New Orleans to Louisville and consumed 360 cords of wood. By the end of the 1830s a more efficient 400 ton steamboat took only six days to make the same trip using the same amount of wood. By 1849, a smaller 211 ton boat required 32 cords every twenty-four hours. And by 1850, a round trip from New Orleans to Louisville on a 400+ ton boat consumed 660 cords. Given the cost of wood at $2.50/cord after 1830, steamboat companies assumed massive fuel costs.

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[57] Lass, 62.

[58] Louis E. Hunter, *Steamboats on the Western Rivers: An Economic and Technological History* (New York: Octagon Books, 1969), 47.

[59] Eric E. Haites, James Mak, Gary M. Walton, *Western River Transportation: The Era of Early Internal Developments 1810-1860* (Baltimore: Johns Hopkins University Press, 1975)

Roads

Waterways may have been the highways of the early west, but roads played a role in the movement of goods associated with the Santa Fe Trail. In 1800, there were sixteen states with little over five million people- mostly in the east. Roads connecting small and large cities along the east coast evolved from animal trails to muddy pathways and later improved with gravel and wooden planks (plank road). The same can be said for roads west of the Appalachians. The primitive nature of road transportation is evidenced by the fact that stage travel in 1800 had a limited range. The area served was bordered on the north by Bennington, Albany, and Boston, on the south by Richmond and the Appalachians to the west. From New York it took three days to Boston or Baltimore, and ten to Pittsburgh.[60] Keep in mind that in 1789, George Washington spent eight days traveling over muddy roads from his home at Mount Vernon, Virginia to New York City where he was sworn in as the first president of the United States of America.

Recognizing the need to connect small and larger cities for the purpose of commerce, individual states chartered private companies to build turnpikes. The Lancaster Turnpike in Pennsylvania was one such road. By 1815, eastern Pennsylvania, New York, New Jersey, and southern New England were connected by quality toll roads. Although greatly 'unimproved', a road later called The 'Great Wagon Road' ran 700 miles from Philadelphia to Georgia.[61]

Following the War of 1812, President Madison advocated the development of transportation and internal improvements with guidance and financing from the Federal Government. After several attempts to pass bills into law, a 'plan' evolved between 1816 and 1828. The American Plan was no so much a plan as it was a combination of earlier Hamiltonian ideas that brought together a banking system to foster business, and a protective tariff to derive income that could subsidize internal improvements. During the 1820s, the government sponsored numerous projects that included the continuation of the National Road.

The National Road, known today as Route 40, was initiated in 1806 by President Jefferson and financially enabled by Congress the same year. The first section was originally called the Cumberland Road. A construction contract was awarded in 1811 and by 1818 the road connected Cumberland, Maryland to Wheeling, West

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[60] http://dsl.richmond.edu/historicalatlas/138/a/?sidebar=text

[61] Taylor, 19.

www.georgianindex.net/America/wagon_road.htm

Virginia.[62] At Wheeling, goods could be sent down the Ohio River. The road reached Columbus, Ohio in 1833 and Springfield, Ohio in 1838. It stopped at Vandalia, Illinois but was later funded for continuation to St. Louis and Jefferson City, Missouri.[63] The Maryland General Assembly was motivated by the Cumberland Road. It decided to combine several earlier turnpikes and connect them to the Cumberland Road. In time, Baltimore, on the Chesapeake Bay was part of a supply chain that connected the Middle Atlantic area to Missouri.[64]

The National Road was special in another way. Early roads were merely wide paths that became rutted quagmires after rain. In winter they became frozen ruts. The idea of preparing the sides of roads and laying a rock base was not a new invention but it was popularized by Thomas Telford, a Scottish engineer. The invention of macadam by the Scotsman John Mc Adam revolutionized road construction. The first macadam surface was laid on the Boonsborough Turnpike Road between Hagerstown and Boonsborough, Maryland in 1823. In 1830, macadam was used on the first seventy-three mile section of the National Road.[65]

Road travel in Missouri prior to 1822 was primitive. The Boons Lick Trail that connected St. Charles to Franklin (Old Franklin), followed the timbered bottom land along the Missouri River. It went through present day St. Charles, Warren, Montgomery, Callaway, Boone and Howard counties. The start of the historic Santa Fe Trail was the end of the Boon's Like Trail at Franklin.[66] The mail was delivered over the 200 mile stretch in eight to fifteen days. In 1822 a road was constructed that cut the time to three days. However, delivery of mail, passengers and freight was still adversely affected by unsafe bridges and mud holes.[67] Today Boon's Lick Trail is part of Interstate 70 that incorporates Route 40 (National Road). Numerous historic venues can be found along its route.[68]

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[62] www.fhwa.dot.gov/infrastructure/back0103.cfm

[63] https://familysearch.org/wiki/en/National_Road

[64] http://marylandnationalroad.org/history-of-the-road/

[65] http://curbstone.com/_macadam.htm

[66] www.booneslickroad.org/

[67] Lass, 62.

[68] www.ruralmissouri.org/04pages/04OctBooneslick.html

Space **T**ime **C**onvergence

1879

Mount Vernon, Virginia to New York (Geo Washington's Inauguration)	8 days

1800

New York to Boston	3 days
New York to Baltimore	3 days
New York to Pittsburgh	10 days
Philadelphia to Pittsburgh	18-35 days (depending on weather)

1822

St. Charles to Franklin, Missouri	8-15 days

Canals

The American Plan included canal building as part of internal improvements, but not before other capital intensive private projects were attempted. In 1816 about 100 miles of canals were financed and constructed in the United States.[69] However, within fourteen years (1830) the United States established a continuous route from New York City to New Orleans. By 1840, more than 3,000 miles of canals existed.[70]

The two great canal systems that affected the Santa Fe Trail supply chain were the Erie Canal and The Pennsylvania Canal System. An Erie Canal was proposed in 1768 but not officially sanctioned until 1808 when the State Legislature of New York funded a survey between Lake Erie and the Hudson River. The canal project broke ground on July 4,1817 and, in the early days of construction, was referred to as 'Clinton's Big Ditch'- Clinton being De Witt Clinton the Governor.[71] The Pennsylvania Canal System was a mosaic of canals connecting various parts of the state. The most prominent project was called the Pennsylvania Canal (Main Line of Public Works) that connected Philadelphia and Pittsburgh. It was begun in 1826.[72]

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[69] Taylor, 32.

[70] www.ushistory.org/us/25a.asp

[71] www.eriecanal.org/

[72] http://explorepahistory.com/hmarker.php?markerId=1-A-1D5

By the time the Erie Canal was completed in October of 1825, everyone considered it an engineering marvel. It reduced the travel time across New York State from two and a half weeks to five days. However, five major obstacles rendered the construction a great challenge- they included the gorge of the lower Mohawk, the water gaps of the Noses and Little Falls fault blocks, the Montezuma Marsh (Cayuga Lake), The Irondequoit Valley (Rochester), and the Niagara Escarpment at Lockport. The original 40X28X 4 foot reached the east side of the Seneca River at Montezuma. The canal was planned to follow a course downhill from Lake Erie to the Hudson River. To cross the Irondequoit Valley a great embankment (artificial) was constructed that included a 245 foot long and 17 foot high culvert that carried the Irondequoit Creek below what became known as the Great Embankment. To provide a feeder water system to the canal a dam was constructed to hold water to be released when needed for the lock mechanism. By 1824, the canal was completed to Lockport and by 1825 to Buffalo.[73]

Because no engineering education was available at this time in the United States, the project became a school in itself. The project was divided into three sections with engineers and surveyors assigned to each. Laborers received from $8 to $12 dollars a month ($.50 a day. Contractors were paid $.10 to $.14 per cubic foot of excavated dirt. For particularly had rock they received as much as $2.00. For embankment construction $.16 to $$.25 was awarded. And for construction of locks and culverts, $.75 to $1.50 was allotted. As many as three thousand men and seven hundred horses were at work at any one time.[74]

The final cost of the 363 mile long canal was seven million dollars. But soon after it was completed the desire for an expansion was recommended in 1836. The work entailed an enlargement to 70X56X7. Locks were doubled in size and the number reduced from 84 to 72. The new locks could float boats of 240 tons contrasted to 70 before.[75] In 1842, the State Legislature passed a law that ended public funding for the canal. Consequently, work on the expansion ended until 1847 at which time funds from tolls paid for its continuation. The income from tolls increased from three hundred thousand dollars in 1824 to $4.5 million in 1862. These tolls provided a surplus to the New York State budget.[76] Today the 'Erie Canal' is used for transportation but it is not the same historic canal described above. Today the modern canal is called the New York State Barge Canal which was completed in 1918. I was surprised to learn this when an acquaintance told me he was taking his sailboat from Duluth, MN to the Caribbean by way of the Great Lakes system and the 'Erie Canal'.

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[73] Lance E. Metz (ed), *Canal History and Technology Proceedings***,** Volume XVII, March 14, 1998 (Easton, PA.: National Canal History and Technology Press,1998), 113-119.

[74] Ronald E. Shaw, *Erie Water West: A History of the Erie Canal 1792-1854* (Lexington, Kentucky: University of Kentucky Press, 1966), 87,88, 91,93.

[75] Metz, 123.

[76] www.sjsu.edu/faculty/watkins/eriecanal.htm

Even before the Declaration of Independence, Pennsylvania leaders proposed a number of canal projects but only one small private one was completed. The Conewago Canal by-passed the rapids on the Susquehanna River eleven miles south of Harrisburg. By 1820, the impetus for canal construction was stimulated by the desire to transport foreign and domestic goods westward from Philadelphia and the transport of coal from the north. Philadelphia businessmen were greatly concerned with the competitive advantage of the port of New York. By 1823, the port of Philadelphia had lost 50% of its value of traffic since 1796 while New York saw its traffic increase by 140%.[77]

Three canal projects commenced in the 1820s. The Schuylkill Canal eventually connected Philadelphia to Port Carbon north of Reading, the Union Canal that connected the city Reading to the Susquehanna River at Middletown (south of Harrisburg), and the Lehigh Canal that connected Philadelphia to the coal fields.[78] The greatest accomplishment was the construction of the Main Line of Public Works. This project was a canal and rail system that connected Philadelphia to Pittsburgh in 1834.

The Route

- Philadelphia, a rail line to Columbia on the Susquehanna River (82 miles)
- Columbia, up the Susquehanna River by canal to Hollidaysburg on the Juniata River (171 miles)
- Hollidaysburg the Allegheny Portage rail (cog) over the mountains to Johnstown (37miles)
- Johnstown to Pittsburgh on the Allegheny River crossing the Conemaugh River (104 miles).

Apart from the same challenges that faced the builders of the Erie Canal, a more daunting challenge faced the Main Line builders when they reached the Allegheny Mountains. The original plan was to build a four mile tunnel. The planners knew they did not have the expertise. The longest of their three tunnels was only 850 feet. Given the lack of knowledge and other logistical issues they opted for a Portage Railroad. The plan for what became the most unusual means of overland transportation then or now was accepted by the State Legislature.[79]

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[77] Metz, 203-204.

[78] Russell F. Weigly*, Philadelphia: A 300-Year History*, (New York, London: W. W Norton and Company, 1982), 238-239.

The east to west portage ascended the Allegheny Mountain by way of a set of five inclines which reached the summit 1400 feet above Hollidaysburg and 1170 feet above Johnstown. Five more inclines descended the mountain. The ten inclines were constructed like 'dry canals'- individually separated to reduce the grade. The steepest grades were 7.25% to 10.25%. One incline was 12,900 feet in length with an incline of .5%.[80] The calculation of inclines and grades was well calculated.

The Main Line of Public Works was a success by Pennsylvania's standards. Prior to 1830, moving people and freight from Philadelphia to Pittsburgh was a challenge given the geography. Transporting 2500-3500 pounds of freight with a team of six horses could take 18-35 days depending on weather. With the completion of the project passengers and goods could traverse the state in 3-5 days.[81]

Four years after the system was operative, 'sectional canal boats' were designed and built. These boats could be loaded onto and off of rail platforms. Passengers and freight could stay with the same 'section'. Freighters and passengers like Charles Dickens who traveled on the system in 1842 liked the improvement. Unfortunately the upkeep and expenses of maintaining all the aspects of the complicated system, along with the creation and expansion of the Pennsylvania Railroad forecasted the decline and doom of the system. In 1844, the Erie Canal moved more than 350,000 tons of goods west as contrasted to the Main Line's 75,000 tons. In 1854, the **S**pace **T**ime **C**onvergence (Compression) was improved when the railroad could traverse the state in 15 hours.[82] The canal could not compete and traffic dramatically fell off. In 1857, the State of Pennsylvania sold the Main Line to the PA Railroad for $7,500,000 million.[83] Today, the only remaining usable section of the entire system is the Philadelphia and Columbia Railroad that was slightly rerouted and is now used by Amtrak.

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[79] William H. Shank, *The Amazing Pennsylvania Canals:150th Anniversary Edition,* (York, Pennsylvania: American Canal and Transportation Center, 1986), 31-32.

[80] Metz, 206.

[81] Shank, 7.

[82] www.rrmuseumpa.org/education/Curriculum%20Guide%20 %20Middle%20Level.pdf

[83] Shank, 95.

Space **T**ime **C**onvergence

1820		
	New York City to Buffalo	14-17 days
1830		
	New York City to Buffalo	5 days
	Philadelphia to Pittsburgh	18-35 days
1834		
	Philadelphia to Pittsburgh	3-5 days

Rail Roads

On April 6, 1856, the first bridge across the Mississippi was completed by the Chicago and Rock Island Railroad. On May 6, the steamboat *Effie Afton* crashed into the bridge. First the steamboat caught fire and then the bridge. The following day the bridge was totally destroyed. Steamboat pilots blew their whistles in support of the event and many people cheered from on shore. This was a demonstration for support of steamboats over bridges and railroads over 'their' water. A lawsuit was filed by the captain of the *Effie Afton* and thereafter a counter suit by the Rock Island Bridge Company who said the crash was no accident. For years there was debate as to whether companies had the right to build bridges over water bodies used by steamboats. The resulting court case, *Hurd v. Rock Island Railroad Company* (1857) involved a lawyer from Illinois who had litigated railroad issues for the Illinois Central.

After Abraham Lincoln's detailed, on sight investigation, his court presentation, and two day summation, the jury could not decide. A House of Representatives hearing regarding the issue was followed by a new suit to have the bridge pilings taken down. A Supreme Court Case in 1862 decided the remaining bridge was allowed to stand and the case for the development of railroads across major water bodies was sustained.[84] The above decision was not directly relevant to the Santa Fe Trail supply chain, but it demonstrates that competition between river and canal traffic and the railroads was coming to an end. Because of speed, cost, and convenience (Space, Time, Convergence), railroads would eventually win the competition for passenger and freight service.

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[84] www.archives.gov/publications/prologue/2004/summer/bridge.html

As James Watt was developing steam technology in England, his assistant William Murdock suggested the idea for a steam locomotive in 1784. English engineer George Stephenson's engine design in 1814 soon put steam locomotives to work hauling coal.[85] Stephenson sold an engine (The John Bull) to the Camden and Amboy Railroad in New Jersey. It arrived by ship and was reassembled and first used in November 1831.[86]

Although the steam locomotive was an English commercial enterprise, The United States took the lead in its development. Need, open land, less restrictive political boundaries and custom barriers, and entrenched monopolies gave the US a strategic advantage. As early as 1815 there were individuals who advocated using steam locomotion instead of building canals. One early advocate was John Stevens who advised the New York authorities that they should build a double track railroad across the state instead of a canal. Stevens later sought and received a charter from the State of New Jersey to build a line between Trenton and New Brunswick, but lacking the funds he gave up on the idea. A Philadelphia inventor (Oliver Evans) advised Congress, in 1816, to utilize steam but to no avail.[87]

The development of railroads between 1827 and 1831 did not pose any threat to water travel but the momentum for steam and railroad building was underway. A group of Baltimore businessmen met in 1827 to discuss internal improvements. They opted for a state charter to create the Baltimore and Ohio Railway- the first important US railroad in the United States. The rail was privately financed at $15,000,000 and planned to run from Baltimore to the Ohio River but only got as far as Wheeling by 1853.[88] At the same time, merchants in Charleston, South Carolina chartered a railroad and bought a locomotive from the West Point Foundry in New York. The Delaware and Hudson Canal Company (NY) got involved with steam locomotion in 1831. Businessmen, knowing that eastern lines would soon reach their markets, sought charters for railroads in Michigan and Illinois. Interests in newly founded Chicago (1832), organized the Illinois and Michigan Canal Commission (Lake Michigan) that became the center for railroad construction. They received their first railroad charter in 1836 and built the first Illinois rail between Chicago and Galena, Illinois.[89]

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[85] Amy Friedlander, *Emerging Infrastructure: The Growth of Railroads*, (Reston, Virginia: Corporation for National Research Initiatives, 1995), 8,10.

[86] www.rrmuseumpa.org/about/roster/johnbull.shtml

[87] Taylor, 75.

[88] Ibid., 76.

The first railroad established west of the Mississippi was the Pacific Railroad. In 1849, a group of St. Louis businessmen obtained a Missouri charter to build the Missouri Pacific Railroad from St. Louis to the Pacific. The project commenced on July 4, 1851 under the new name Pacific Railroad, and the first track section was completed in 1852. People cheered along the way as the train traveled five miles west and stopped at the 'end of the line'. The first complete section made it to Kansas City but was interrupted by the panic of 1857 and the Civil War.[90] In 1850, about 9,000 miles of rail were in operation in the United States. Sixty percent of them were in New England and the mid-Atlantic states. At the time most of the 1,300 miles of track beyond Pennsylvania lay in the Old Northwest of Ohio and Michigan.[91] As late as 1850, no eastern seaboard port had a connection to western markets. Understandably, Mississippi River steamboat businesses did not fear of competition from the railroads. There were no railroads within fifty miles of St. Louis by the end of 1849- by which time 2,750 steamboats carrying 590,000 tons of cargo had arrived in St. Louis.[92]

The Santa Fe Trail supply chain was still dependent on roads, canals, and waterways. River boats were still cheaper means of transportation. Rail freight rates cost two to three times as much as water. Speed however was the only advantage of rail. In addition to costs, the lack of uniformity in track gauge and the lack of technology we associate with trains was missing.[93] The one Railroad having an effect of the supply chain was the Pennsylvania Railroad.

The Pennsylvania Railroad was incorporated by the State Legislature on April 13. 1846 and a line opened in 1852. The company was created in response to the continuing loss of business to New York State (Erie Canal) The direct 348 mile road was expected to replace The Main Line of Public Works, which although successful, was still slow. The rail lines from Philadelphia to Harrisburg were leased from three railroads and eventually absorbed. The sixty-one miles west of Harrisburg opened in September of 1849. One year later it extended to the Allegheny Portage. Service from Philadelphia to Pittsburgh was established on December 10, 1852 and by 1856 the fastest passenger train could traverse the state at 25+ mph. The Pennsylvania bought out the The Main Line of Public Works in 1857 and within three years owned 133 locomotives, 67 passenger cars, and 2,016 freight cars as of 1860.[94] A direct connection from Philadelphia to Chicago was made in 1858 thus cancelling the previous advantage of New York State.[95]

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[89] Sahra H. Gordon, *Passage to Union: How the Railroads Transformed American Life, 1829-1929,* (Chicago: Ivan R. Dee, 1996), 26-27, 20-22.

[90] www.up.com/aboutup/special_trains/heritage/mopac/

Robert Edgar Riegel, *The Story of the Western Railroads*, (New York: The Macmillan Company, 1926), 1.

[91] John F. Stover, *Iron Road to the West: America's railroads in the 1850s*, (New York: Columbia University Press, 1978), 5 ,6, 14.

[92] Ibid. 15, 16.

[93] Stover, 19.

Many short and intermediate lines were constructed to the Mississippi River and some beyond during the decade of the 1850s. Their expansion was interrupted due to the refusal of Southern 'States Rights' advocates to allow northern rail expansion into the west and as a consequence of the Panic of 1857**.** As of April 12, 1861, railroad tracks connected the Atlantic coast with the Mississippi River and beyond. But because of Southern sectional interests, no tracks had been created to connect the north to the south on a geographic line between Washington, DC to the Ohio River.[96]

To give added significance to distance, speed and time consider that when newly elected President Zachary Taylor was moving into the White House in 1849, a forty year old congressman was preparing to return to his home state. He had just been accepted to practice law before the Supreme Court and recently received a patent in Washington for an invention that could lift a water vessel over a shoal. On March 21 or 22, he probably boarded the Washington Branch B&O and headed 7 miles west where it connected to the B&O 'Great Western Mail' bound for Cumberland, Maryland. The total cost was $8.60. There the train ended and he transferred to a stage line that took him to Wheeling, West Virginia. The 130 mile stage trip took twenty-four hours. The ticket for the nine passenger, Concord-type coach was another $4 or $5. Finally at Wheeling he was able to board a steamboat for the 1,100 mile trip down the Ohio to Cairo, Illinois and then up the Mississippi to St. Louis. He docked at St. Louis on March 26 and left by stage for his home in Springfield, Illinois.

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[94] Ibid. 51, 52, 53.

http://mikes.railhistory.railfan.net/r009.html

[95] Weigly, 368.

[96] Gordon, 5, 6.

A few weeks earlier than March 21, retired President Polk left Washington for his home south of Nashville, Tennessee. Because of the lack of rail infrastructure in the South his journey, unlike Lincoln's took three weeks. In April of 1861, President Elect Abraham Lincoln boarded a special train at the Great Western Railway Depot in Springfield for a 1,900 mile trip back to Washington. We know that his trip was slow due to stops along the way and delays associated with threats against his life in Baltimore. The point of this is that had he chosen a direct route, his journey to Washington, DC would have been only 966 miles and taken fewer than three days.[97]

By 1860, rails connected Pittsburgh, Cincinnati, Louisville, St. Louis, Memphis, and New Orleans. However rail did not replace steamboats on the Ohio, Mississippi, and Missouri Rivers because rail lines were mostly east-west directions and shippers needed north-south routes. As ships increased in size, transportation up river became more dangerous due to low water, sand bars and groundings.[98]

Space **T**ime **C**onvergence

1854 (about 25 mph)

Philadelphia to Pittsburgh	15 hours

Wagons

The subject of wagons comes last not because of a low priority of importance, but for two and maybe three reasons. Because wagons existed from the beginning of American transportation history and continue to be used for many purposes today, few historical researchers have taken a focused interest in the subject. The second reason may be that because no wagons from the Santa Fe Trail period exist, most of the extant work with wagons is speculative and based on written historical descriptions (diaries), drawings, and lists of wagon makers.[99] The third possible reason may be that wagons, sold in Santa Fe or brought back to Missouri, were disassembled for building materials or cannibalized for other wagon repairs.

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[97] Stover, 1-4.

[98] Thomas E. Redard, *The Port of New Orleans: an Economic History, 1821-1860*, (Volumes I and II) (Trade, Commerce, Slaves, Louisiana), (Dissertation), (Baton Rouge: Louisiana State University and Agricultural & Mechanical College, 1985). http://digitalcommons.lsu.edu/cgi/viewcontent.cgi?article=5150&context=gradschool_disstheses

[99] Davis Sneed (Wheels That Won The West® Publishing & Archives July 25, 2016), from discussion on phone.

Good material exists for the Conestoga wagon but most other research on the subject of wagons takes the investigator in a logical circle. It starts at any point where an author or writer deals with the subject then the research goes on to other sources that all use the same material and citing(s). While all of these sources are useful, they all use earlier sources and the same basic material. The finest and most complete treatment of the subject is Mark L. *Gardner's Wagons for the Santa Fe Trail*. Author David Sneed's Twenty plus years collecting wagon materials is extensive but his knowledge is not in book form. He is nationally known for his articles and talks.

If you asked a person to name at least ten models of automobiles they could easily do it. Ask them to name five types of important historic wagons and they would be hard pressed to move beyond a Conestoga, the Prairie Schooner, or a stage coach. There were many types of wagons relevant to the Santa Fe Trail supply chain and dozens of types of wagons associated with the West.

Until better roads replaced paths and connected eastern seaports to inland cities, specialized wagons were not required. The same can be said for larger cities within states. Local markets did not extend much farther than a two day ride from Boston, New York, Philadelphia, or Baltimore. Inland, farmers had time and distance challenges, but after the War of 1812, internal improvements gave rise to expanding local markets and eventually the evolution of regional markets.

There is no doubt that wagons of all types played a role in the Santa Fe Trail supply chain. What is in doubt, however, is specific knowledge of the types. Many sources cite William Becknell's journal in which it is said he took three wagons to Santa Fe in 1821 and three to Santa Fe on his second trip. In 1824, Meredith Miles Marmaduke utilized two road wagons, twenty Dearborns, two carts and two hundred horses and mules. The caravan to Santa Fe in 1825 included thirty-four wagons.[100] A Dearborn was a light four wheeled wagon dating back to 1821. It had a top and curtains and was used primarily by farmers, emigrants, and traders.[101]

The best known wagon, even in existence before 1800, was the Conestoga. The Conestoga wagon was an integral part of transportation on several routes in the early 1800s. It traversed the state from Philadelphia to Pittsburgh with cargo that was then sent down the Ohio and Mississippi Rivers. It made its way along the National Road from Baltimore to Wheeling, West Virginia and eventually to Vandalia, Illinois. It was also used on the 'Great Wagon Road' (1740s on) through Virginia into North Carolina and down to Georgia.

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[100] Gardner, 3,4,5.

[101] www.encyclopedia.com/doc/1G2-3401801153.html

The first recorded use of the name was in 1717 when William Penn's former secretary James Logan) wrote that he bought a 'Conestogoe Waggon' to transport his furs from his fort on the Lancaster frontier sixty miles to Philadelphia. He then returned with goods for the settlers along the Conestoga River in Lancaster County. He liked the wagon for many reasons. The Pennsylvania 'Palatine' German and Swiss wagon builders of Lancaster County replaced a flat bottomed wagon bed with a center sloping one to reduce movement. For long hauls they extended the length up to sixteen feet and added four feet to the width. Oak was used for the perch (long pole connection the axles), hickory for the spokes, and non-splitting gum for the hubs. To keep cargo dry as it crossed a water body, wider, iron-rim wheels, 40-45" (front) and 50-65" (rear), were constructed. Cargo was protected from inclement weather with canvas and linen coverings stretched over wooden bows. This iconic design evolved over years of development and became known as 'ships of inland commerce'.[102]

The size and capacity of the Conestoga was remarkable. The wagon could handle over 10,000 lbs- what the wagon men called 'a hundred hundred' load. The wagon required four to eight special horses to pull the load. These large draft horses were bred in the Conestoga Valley and were 16 to 17.5 hands high to the withers (shoulder blade) and weighed around 1,400 lbs. In addition to heavy harnessing, braces of bells jingled to give warning of the wagon's approach. A fully loaded wagon and team could easily extend sixty feet in length and travel twelve to fifteen miles a day. By 1830, there were almost 3,000 wagons operating between Philadelphia and Pittsburgh. But by 1845, the economics of the Conestoga gave way to the more efficient and cost effective railroad. The Pennsylvania and Reading Railroads took over coal hauling and the transport of agricultural products.[103]

The Conestoga wagon was duplicated and modified by wagon makers as people and transportation lines extended westward. Pittsburgh superseded Central Pennsylvania as the ideal site for production after the completion of the *Main Line of Public Works* (canal) across the state in 1835. All of the necessary resources were located in the Pittsburgh area. Early Santa Fe traders and agents traveling to the east coast for business usually passed through Pittsburgh. Contracting for new wagons and having them shipped to St. Louis and then to Missouri was economically sound. As more efficient water connections were made between Pittsburgh and St. Louis, the cost of buying wagons in St. Louis made that city a new site for wagon production.

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[102] Edwin Tunis, *Colonial Craftsmen and the Beginnings of American Industry*, (Baltimore: The Johns Hopkins University Press, 1965), 93,95.

http://explorepahistory.com/hmarker.php?markerId=1-A-60

www.colonialsense.com/societylifestyle/signs_of_the_times/conestoga _wagon.php

[103] Michael Herrick, The Conestoga Wagon of Pennsylvania", *Western Pennsylvania Historical magazine*, 51, 1968. 157, 159, 160. https://journals.psu.edu/wph/article/view/2921

Joseph Murphy, an Irish immigrant, apprenticed himself to a wagon maker in 1819 and in 1825 established J. Murphy & Sons, in St. Louis. He produced a small wagon in 1827 and became a successful wagon maker. He constructed his wagons and then sent them up the Missouri by steamboat. In 1839, The Mexican government placed a tax of $500 on each wagon arriving in New Mexico. This was an unwelcomed surprise for Santa Fe Trail traders.[104] Legend has it that Murphy talked to traders and solved their problem by building a large wagon- similar in shape to the 'Conestoga/Pittsburgh wagons but larger. His wagon was 16' long, 8' wide, with 7' diameter back wheels having 8" wide wheel rims (tracks). When fully loaded it could handle up to 20,000 lbs of cargo. To transport these wagons required a team of twelve oxen. Bigger wagons meant fewer wagons being taxed in New Mexico. He also sold them to the military. By the late 1850s, he modified the design that allowed two wagons to be connected and pulled together similar to our modern day tractor trailers.[105]

In St. Louis, the Espenschied brothers were known for wagons. They were German immigrants who opened a blacksmith shop in 1843 and expanded the business to include wagons in 1843. Their wagons, costing about $58 each, were more for transporting people and small loads.[106] St. Louis competition in the wagon making business was strong. The 1850 St. Louis Business Directory shows ten companies who paid to be listed. No doubt many more existed.[107] The last St. Louis wagon maker to be recognized is the Linstroth Wagon Company, founded in 1849.

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[104] Dary, 164.

[105] www.jeffcarroll-legendarytexas.com/murphys_wagon_august_2007.html

Joseph Murphy Wagon Maker (https://books.google.com)

[106] www.coachbuilt.com/bui/l/luedinghaus/luedinghaus.htm

[107] http://dl.mospace.umsystem.edu/umsl/islandora/object/umsl%3A73331#page/100/mode/1up

Originally known as Linstroth and Keune, the company promoted itself as the 'Pride of St. Louis'.[108]

Space **T**ime **C**onvergence

1820s on

Horse/ Mule	3 mph and up to 12 mph/ Depending on weight
Wagon	3-8 mph

Between 1821 and 1860, the revolution in transportation had greatly affected the Santa Fe Trail supply chain dynamic of **S**pace **T**ime **C**onvergence. This modern concept and formula was not known by business agents and traders at the time, but they were well aware of distance, speed, and time when attempting to maximize profits.

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[108] www.farmcollector.com/equipment/st-louis-wagon-builders-zm0z13octzbea.aspx?PageId=4#ArticleContent

CHAPTER FIVE

Evolution of The Santa Fe Trail to 1821

Spanish Explorers

People who are aware of the Santa Fe Trail carry knowledge and images from their school days, personal readings and or trips to New Mexico. Much or all of that awareness is based on the time after 1821 when a trader William Becknell made his way to Santa Fe and back to Missouri in 1822. This is typical of American History books that start our history on the east coast and then move westward. The misconception is American history moved east to west when in fact it began in both the east and the west and met at the Mississippi in 1803 before continuing westward under the policy of Manifest Destiny. To better appreciate a more complete history of the Santa Fe Trail supply chain, the following is a brief introduction to the Santa Fe Trail prior to 1821.

As with all trails there is a start and an end. Historic trails like The Cherokee Trail, The Mormon Trail, The Lewis and Clark Trail, and The Chisholm Trail are named after the person(s) or group who created and used it. Some trails are named according to the purpose. The Overland Trail (stage and mail) and The Pony Express Trail (mail) are examples. The Oregon Trail, California Trail, and The Santa Fe Trail were named for the terminus of the route.

Long before The Santa Fe Trail we think of today there were other trails associated with the famous city. Even the establishment of the city of Santa Fe in 1610 was preceded by a hundred years of Spanish exploration after the founding of Spanish Mexico City and New Spain by Cortez in 1521. The Spanish continued to explore territories along the present day southern Gulf States. In 1540, Coronado, the Governor of a northwest province of New Spain, set out on a major expedition that took him north to present day Arizona, New Mexico, and parts of Oklahoma, Texas, and Kansas. Finding no wealth, he retraced his path, returned to his province and lived out his days in obscurity in Mexico City.

Decades later, the Spanish renewed their interest in the lands to the north. Beginning in 1581 expeditionary parties ventured north. Gaspar Castano de Sosa established a personal settlement on the land of the Pueblos in 1590. For this he was recalled to Mexico City and reprimanded for going into Indian lands without authorization. The Viceroy of New Spain soon decided that someone had to go north and claim the territory for Spain. Juan de Onate was chosen to become the Governor of New Mexico and colonize the area. He set out in the spring of 1598 with a caravan of 500 colonists and 130 soldiers. Like Coronado, he too was not successful and only contributed to unrest with the native populations (Pueblos and

Indians). After years of hardship he resigned, advised his people to move to a new valley and was replaced by a new Governor. Pedro de Peralta arrived and established the new settlement of *La Villa Real de Santa Fe de San Francisco* (Royal Town of the Holy Faith of Saint Francis of Assisi) in 1607 and named it the capital in 1610.[109]

French Explorers

As the Spanish were exploring and settling New Spain and New Mexico in the 1500s and 1600s, the British and French were expanding their interests in North America. Their motives were not gold but material wealth (furs and fish) and converting the indigenous populations to Christianity (Catholicism). In 1534 French explorer Cartier encountered Natives (present day New Brunswick) who were interested in trade. By the time Hudson arrived in Nova Scotia in 1609, the French had already been trading. The Dutch too were trading with the Russians via Archangel and Amsterdam and by 1611 trading with the Natives in New Amsterdam.[110] In 1606, King James claimed title to North America and the competition for possessions and wealth between the various countries ensued.

The story of European clashes in North America is well documented. However, the connection between Santa Fe and North American fur traders is less known. The French, outnumbered by the British along the northeastern seaboard, chose to focus on eastern New France and lands to the west of the Appalachians. Samuel de Champlain sailed up the Saint Lawrence and mapped it as far as present day Montreal in 1603. In 1608 he again sailed up the river and established Quebec, the first permanent French settlement. Quebec eventually became the French fur trading center, but the French were involved in a long standing conflict with the Iroquois. Accompanied by his Huron friends, he explored the interior of Canada in 1616. Although the British attacked and took control of Quebec in 1629, it was returned to France by treaty in 1633.

The French continued exploration and slowly expanded their trade westward. In 1642, Montreal was established as a mission center and soon became the center for the fur trade. Due to inept administration, the French government took control of the operation. The impetus for French penetration into the Great Lakes region and the Ohio Valley was due to the explorations of Jesuits and several French explorers. In 1669, René-Robert Cabelier, Sieur de La Salle sailed up the St. Lawrence, into

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[109] David Dary, *The Santa Fe Trail: Its History, Legends, and Lore* (New York: Penguin Books, 2000), 21-22.

[110] Eric Jay Dolin, *Fur, Fortune, and Empire* (New York and London: W.W. Norton & Company, 2010), 11.

Lake Ontario and part way down the Ohio River. His second exploration begun in late 1669 took him across present day Lake Erie and Huron and south to the southern tip of Lake Michigan where he trekked across Illinois and onto the Mississippi River.[111]

Jacques Marquette and Louis Jolliet conducted individual explorations but in 1673 journeyed together down the Mississippi farther than La Salle. The final leg of the French Mississippi exploration was concluded by La Salle in 1682 when he arrived at the mouth of the river and claimed the territory on the eastern side of the river for France. The French and Spanish territories were now east and west of the Mississippi.[112] But even before the expeditions of La Salle, Marquette and Jolliet, French Jesuit clergymen and fur traders moved out of Montreal and followed the Ottawa River to North Bay and points west in search of furs. Along the great lakes surrounding the present day states of Michigan, Wisconsin, Illinois, and Minnesota trading relations were established with the indigenous peoples.

French Trading Forts

Apart from the developing and continuing competition between French and British fur trading companies, our concern here is how the Spanish in New Spain, particularly Santa Fe, were impacted by the French. In 1699, the French established forts on the Mississippi River and Gulf Coast.[113] And as early as 1695, Apaches reported to Spanish authorities that the French had traded arms to Plains Indians.[114] Spain did not recognize the legality of French activity in their claimed territory but they were not logistically prepared to prevent the encroachment. The Spanish Viceroy ordered all provincial governors to prevent the entry of foreigners and their goods after he was informed of new French incursions into Texas in 1707.[115]

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[111] James Hanson, *When Skins Were Money: A History of the Fur Trade*, (Chadron, Nebraska: Museum of the Fur Trade, 2005), 37.

[112] A good site for excellent maps of the journeys of La Salle and Marquette and Jolliet can be found at http://www.historymuseum.ca/virtual-museum-of-new-france/the-explorers/

[113] www.mshistorynow.mdah.ms.gov/articles/35/french-colonial-period-in-mississippi

[114] Dary, 31.

[115] *Donald E. Chipman, Spanish Texas, 1519–1821* (Austin: University of Texas Press, 2010), 107.

In early 1716, Spanish settlers were sent into present day Texas to establish a buffer. Never the less, French interests expanded in the area when they built a fort in Natchitoches. All the Spanish could do was establish two more missions but neither could be adequately supplied. Spain continued to be alarmed with rumors of French traders settling among the Pawnee in present day Nebraska. Spanish authorities sent out a force but found no evidence of Frenchman when they reached the Platte River.[116]

There was little the Spanish could do about the expansion of French commercial interests into the southwest. The activities and the songs of the French *voyageurs* could be heard on the Rio Grande where French and Indians traded in 1717. In 1719, The French were also on the Arkansas River trading with the Pawnees.[117] In September, New Mexico Governor Valverde rode out of Santa Fe to Taos and then, with soldiers and Pueblo assistance, crossed the Sangre de Cristo (present day Colorado) in search of Comanche Indians. What he found instead were Apaches who informed him of the presence of the French. Due to the time of year and impending weather, he returned to Santa Fe for the winter.[118]

The governor sent a contingent from Santa Fe the following year (June 1720) with orders to locate and deal with both the Indian conflict and French interlopers. The result was the massacre of the expedition by Indians and, according to survivors, maybe even Frenchmen.[119] Political leaders in Mexico City and Santa Fe were troubled by these developments but there is another important story to be told.

Spain, Mexico City, and Santa Fe

Santa Fe, with a population of fewer than 1,500 in 1630[120] was an isolated and second class city in contrast to Mexico City with a population of 100,000 in the early 1700's.[121] After the Spanish monarchy realized potential riches in the north were not real, it never the less held on to Santa Fe as part of its claim to the territory. Supplying the city and its inhabitants with goods was difficult. The Spanish, like other European nations, maintained a strong grip on trade with their colonies.

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[116] Dary, 31-32.

[117] R. L. Duffus, *The Santa Fe Trail* (Albuquerque, New Mexico: University of New Mexico, 1958), 20.

[118] Duffus, 21.

[119] http://www.santafenewmexican.com/news/trail_dust/trail-dust-villasur-massacre-rocked-santa-fe-in/article_a86cf5c8-bb54-5736-b067-83c91e46fca2.html?mode=image&photo=1

[120] http://www.narhist.ewu.edu/pathways/on_the_road/santa%20fe/sft_timeline.html

[121] http://www.maritimeheritage.org/ports/spain.html

In the early 1600s, government subsidized goods came up the Chihuahua Trail also known as *El Camino Real* (The Royal Road from Mexico City to Santa Fe). At first these supply caravans reached missions and Santa Fe about every six or seven years. This could be considered the first Santa Fe supply chain. The infrequency of caravans created great hardships for the inhabitants.[122] The process of supplying Santa Fe began in Spain where a Spanish convoy of hundreds of ships was sent west. At a particular point, the convoy was divided and ships continued on to their specific destinations in South America and the Pacific. Goods destined for Mexico City and intimately Santa Fe were unloaded at Veracruz (due east of Mexico City) and transported my mule trains to Mexico City.[123]

From there, they traversed the 1,500 mile trail north along *El Camino Real* to missions and ultimately Santa Fe. The round trip took six months north, six months to distribute the goods and six months back- bringing livestock and produce to Mexico City.[124] The city of Chihuahua was established in 1709 and soon thereafter Chihuahua merchants gained control over trade on *El Camino Real*. Their trade monopoly created unscrupulous trade (barter) valuations resulting in extravagant profits for the Chihuahua traders when they returned to Mexico City with goods from the north.[125] Understandably, Santa Fe residents and local leaders became frustrated with the process, time lapse, and costs, but could do little about it until the late eighteenth and early nineteenth centuries when the French and later Americans entered New Mexico.

Fear of encroachment and loss of territorial control were the historic reasons for Spanish concern with French traders. The 'closed door' policy regarding external trade became increasingly inconsistent and goods indirectly made their way into Santa Fe as a result of bribes and confiscation.[126] Keeping in mind that Chihuahuan traders frustrated the Santa Feans, it is not surprising that locals would want to amend the economic imbalance. By the 1730s the desire for trade goods ushered in a more lenient attitude and policy regarding trade but did not solve all the problems.

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[122] Seymore V. Connor and Jimmy M. Skaggs *, Broadcloth and Britches: The Santa Fe Trade* (College Station and London: Texas A & M University Press, 1977), 21.

[123] Philip Russell, *The Essential History of Mexico from Pre-Conquest to Present* (New York and London: Routledge, 2016), 111.

[124] Dary, 25-26.

[125] Seymore and Skaggs, 21.

[126] www.legendsofamerica.com/we-santafeexploration.html

First French Traders to Santa Fe

The first French traders affected by the changes were the Mallet brothers and their group of traders. Little is known about Pierre and Paul other than they were born in Montreal and as *coureurs de bois* (woodsman or trader of French origin) had moved to present day Illinois in 1734.[127] The only account of their experience is a translation of their surviving journal which has provided historians a perspective on their experience. They arrived in Santa Fe on July 22, 1739, but their trek into the Spanish territory was different from previous traders. Their trail approximated a good part of what would eventually become the Santa Fe Trail from present day Kansas. Unless otherwise noted, the following treatment of their journey and experience comes from that journal.[128]

On July 15, 1739, the expedition arrived at the Spanish mission of Picuris, just north of Taos, New Mexico. The brothers sent a letter of introduction to the commandant in Taos who sent them a gift of food the following day. This may be the first recorded Spanish welcome of foreign traders in Spanish New Mexico. After a gracious reception from the commandant, priest, and townspeople, they left for Santa Fe. There on the 22nd of 1739, they were also welcomed but had little to trade because while crossing a river, they lost several horses carrying trade items. Their loss ironically was of no consequence because their remaining goods were immediately confiscated by the Santa Fe Commandant.

Although the Mallet group was not technically arrested, they were detained. The local authority liked the confiscated trade items, but the Commandant was required to inform the authorities in Mexico City of the foreign contact. A letter was sent to the Viceroy in Mexico City informing him of the incident and asking what to do with the group. The letter also requested trade relations between New Mexico and French Louisiana. Nothing could officially be done without sanction from Mexico City. Given the fact that communication between Santa Fe and Mexico was poor, it is not surprising that months went by before word arrived from Mexico City to both deport them and prohibit trade with French Louisiana.

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[127] http://plainshumanities.unl.edu/encyclopedia/doc/egp.ea.026

[128] Donald J. Blakeslee, *Along Ancient Trails: The Mallet Expedition of 1739* (Niwot, Colorado: University Press of Colorado, 1995)

According to observations during their stay, the Mallets described Santa Fe as a non- fortified town of wooden structures and about 800 families. The Mallets left Santa Fe on May 1,1740 with a letter of certificate from General Jean Hurtado (*alcalde major*, Captain of War, Lt. Governor)- a letter to be delivered to the French authorities in New Orleans. Apart from telling the French how wonderful he was and how well he treated the Mallet group, he asked that the French give the Mallet brothers a royal patent for trade with his Kingdom (New Mexico/Santa Fe).

Herein lies a great irony associated with the evolving Santa Fe trade. The Viceroy, representing Spanish policy, and no doubt Chihuahuan interests, declared no trade with the French- yet the frustration of Santa Fe regarding the desire for goods shows up in the Santa Fe authorities asking the French for trade. After Mexican independence in 1821, Spanish trade policy would be voided. But for now, inconsistency was the norm.

When the brothers arrived in New Orleans in March 1741, they presented the Hurtado letter. They explained their presence in New Orleans, details of their trip to Santa Fe, and sought permission to return with more trade goods. Future trade between French Louisiana and Spanish New Mexico seemed to be underway. Although an immediate trade party was sent off in September 1741, it experienced problems and returned in 1742.

French trading parties eventually arrived in Santa Fe in 1748, 1749, 1750, and 1752 but ended soon after. As result of the Seven Years War (French and Indian War in North America) fought between 1754 and 1763, France secretly ceded the Louisiana Territory to Spain in 1762 and all of its territory east of the Mississippi to Britain in 1763. Thereafter, the Spanish monarchy was no longer concerned with French politics and consequently, no French are known to have entered New Mexico for trade after 1762.[129]

Change in Spanish Trade Policy after 1763

With the removal of French influence, Spain began a thirty nine year control of the colony of Louisiana and the city of New Orleans. Its initial objective was to strengthen its position with the established forts along the eastern edge of the newly acquired territory. The first was at Natchitoches (site of 1714 French post) in present day northwest Louisiana; the second on the Arkansas; and the third just north of present day St. Louis.[130] Economic trade was a secondary interest but that would change as a result of the social and economic dynamics developing at the mouth of the Mississippi.

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[129] Dary, 35.

[130] Ibid., 36.

Prior to the French relinquishing the territory to Spain, a group of mixed racial/ethnic merchant planters (Creole) who descended from French and German settlers, politically and economically established themselves and acquired significant influence in New Orleans. The arrival of Spanish authority in 1766 resulted in conflict that was not resolved for two years. But given the growing economic interests of the Creoles and the Spanish, differences evaporated and entrepreneurs of varied racial and ethnic backgrounds began to cooperate.

Further up the Mississippi, Spain had no objections to the French settlement at St. Louis. Given Spain's political relationship with France and an eye to future British interests east of the Mississippi, Spain believed that such a settlement and increased colonization would help protect its New Mexican territory. However, Spanish ignorance of the new Louisiana Territory and the Natives in the area lead to the employment of French traders.[131]

Pierre 'Pedro' Vila, originally from Lyon, France, was knowledgeable and soon became an advisor to the Spanish authorities. He was asked to open a trail between the San Antonio Mission and Santa Fe. His eleven-hundred-mile trek from San Antonia to Santa Fe was laborious. The group left in October 1786 and arrived in Santa Fe in May of 1787. Now in addition to *El Camino Real*, a second but very obscure trail made its way to Santa Fe. Perhaps Vila's more important journey was made between Santa Fe and St. Louis between May and October of 1792 because almost three decades later another trader, this time an American, would use the route to open trade between the United States and Santa Fe.[132]

The United States Looks West

As Spain slowly adapted to managing its new territory after 1762 and worked to establish trade routes to Santa Fe, politics between the British government and their colonies deteriorated. The end of The French and Indian War in North America (1763) resulted in France ceding all of its North American holdings to Britain. The British immediately issued a proclamation to its colonies prohibiting Trans-Appalachian migration toward the Mississippi Valley. That did not stop the movement of people and between 1763 and 1775 Britain found itself with a new political dilemma.

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[131] Ibid, 38.

[132] www.tshaonline.org/handbook/online/articles/fvi0

By the time Pierre 'Pedro' Vila arrived in Santa Fe in 1787 from San Antonio, the American colonies had fought a revolution, defeated the British, acquired the Trans-Appalachian West to the Mississippi River, established the Articles of Confederation and were meeting in Philadelphia to discuss a new framework of government. When Vila arrived back in St. Louis in October 1792, the United States was functioning under a new constitution, preparing for the unanimous nomination of George Washington for his second term, and France was one month into the First Republic as a result of the French Revolution.

Napoleon overthrew the Directory of the Republic in 1799 and proclaimed himself First Consul in 1800. He planned to establish a North American Empire and subsequently took back control of the Louisiana Territory from the Spanish in 1800. After failure to establish French influence in the Caribbean, and continued conflict with the British, Napoleon sold the Louisiana Territory to the United States in 1803- assuming he could retake it later.

But even before Napoleon's surprise offer, President Jefferson was interested in the lands of the Missouri River and west. In 1802 he approached the Spanish Minister for permission to explore the area. He drew up objectives and asked his friend Captain Meriwether Lewis to prepare for an exploratory expedition. The sale of Louisiana, however, resulted in a much grander expedition with Captain Meriwether Lewis and partner Second Lieutenant William Clark.

New Orleans and St. Louis

On December 20, 1803, the fifteen starred flag of the United States was raised above Jackson Square as the United States took control of the city of New Orleans and the Louisiana Territory. Only eighty-five years earlier in 1718 it began as the small colony of Nouvelle-Orléans- established in the middle of a cypress swamp by a company of salt smugglers hired to clear the land. The land and weather won the initial battle and the early city was not secured until 1720 when the Company of The Indies (French) laid out the rectangular city we know today.

The modern concept of a supply chain was already evident by 1723 when the Franciscan order of Capuchins arrived in New Orleans to bring a 'higher order' of civilization to the town. They wrote to the Bishop of Quebec who ordered that the company in charge had to supply each monk with a cask of Bordeaux wine, two quarts of flour, one half quart of bacon and beef, one and one-half quarts of brandy, 8 pounds of Holland or Gruyére cheese, 24 pounds of candles, one and one- half pounds of pepper, 20 pots of vinegar, 25 pounds of salt, and 12 pounds of oil. Keep in mind this list was for each monk's needs. Requests for live stock quickly followed.[133] Thereafter, the demand for goods increasingly expanded.

Commerce became the 'life blood' of the city and region, but the colony was economically abandoned in 1720. Between 1723 and 1734 few French ships arrived with goods. After 1730, maritime trade boomed as a result of a new generation (Creoles) with money and material demands, and the authority to expand trade. With the Spanish takeover of Louisiana and New Orleans (1762), trade continued to boom with much of the trade associated with smuggling by wealthy citizens and officials.[134]

New Orleans evolved into a complex social, political, and economic mosaic. After fires in 1788 and 1794, the city was rebuilt in brick. By 1803 it was home to about 8,000 people- most of whom were associated with commerce.[135] With the raising of the US flag in New Orleans (Dec 1803), the United States took control of the city and the Mississippi River. American commerce thereafter was unmolested and unrestricted. The city become an *entrepot* (center to which goods are brought for import and export, and for collection and distribution) but the 'gateway to the west' and Santa Fe would be farther north at St. Louis.

The American authorities in New Orleans authorized Captain Amos Stoddard to travel up river and take possession of St. Louis. Stoddard, acting on behalf of the United States and France arrived in St. Louis months later on March 10, 1804. He took possession of the city and surrounding lands from Spain in the name of France and immediately passed it to the United States.[136] By the time Stoddard arrived in St. Louis the city was already well established as a result of decades of French fur trapping and individual entrepreneurs.

French born Pierre Laclède Liguést landed in New Orleans in 1755 and by 1764 established a trading company with Gilbert Antoine de Maxent - a well to do New Orleans merchant. Within the same year, Pierre Laclède and his adopted son Réne August Chouteau sailed up the Mississippi to establish a trading post under the French authority given to the Maxent, Laclède Company. They received a trading monopoly with the Indians on the upper Missouri and the west bank of the Mississippi to the Des Moines River. Laclède and Auguste Chouteau left New Orleans on August 3, 1763 and ended their seven hundred mile Mississippi journey - wintering at Fort de Chartres. After surveying the area for a suitable site, Laclède sent his son to supervise construction of a warehouse, cabins, and a simple grid town plan north of the fort on February 14, 1764. In April, Lacléde visited the village and named it Saint Louis in honor of the French King Louis XV.[137]

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[133] Sarah Searight, *New Orleans* (New York: Stein and Day Publishers, 1973), 25.

[134] Shannon Lee Dawdy, *Building the Devil's Empire: French Colonial New Orleans*. (Chicago and London: University of Chicago Press, 2008), 118, 130.

[135] http://www.maritimeheritage.org/ports/usNewOrleans.html

[136] Shirley Christian, *Before Lewis and Clark: The Story of the Chouteaus, The French Dynasty that Ruled America's Frontier* (New York: Farrar, Straus, and Giroux, 2004), 29.

Even before Pierre Laclède established his city and trading fort, fur was the primary item of commerce on the Mississippi. At the turn of the 18th Century thousands of individuals were involved with the fur interests of the Northwest Company, The Hudson Bay Company, and the Mackinaw Company. Laclède and Chouteau established excellent relations with the Native Indians and soon became involved with the fur trade. Eventually, goods shipped up river from New Orleans were exchanged at St. Louis for bison skins and furs. Over time the enterprise extended outward with traders and Chouteau himself establishing personal relations with villages.[138] On a return trip to St. Louis in May of 1778, Pierre Laclède took sick and died at the mouth of the Arkansas River. He was buried in the woods and the boat continued north to St. Louis. There Laclède's possessions were inventoried and later sold to August Chouteau.[139]

For the next twenty-six years, August and his half brother Pierre went on to establish a great trading company and become associated with the United States government and Santa Fe Trade. But they were first challenged by a newcomer named Manuel Lisa who came up river in 1789 from New Madrid and legally challenged their trade monopoly and won. Monopolies were difficult to come by and maintain as competition increased. In 1800 August received a handwritten letter from thirty-six year old John Jacob Astor who was seeking payment for an outstanding debt but more importantly a trading deal with the Chouteau brothers.[140]

By the autumn of 1803, St. Louis was still a village of fewer than 1500 people who lived on three streets along the river. On March 10, 1804, American troops lead by Captain Amos Stoddard crossed the Mississippi by barge, marched up present day

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[137] Candace O'Connor (ed), *Saint Louis: An Informal History of the City and Its People, 1764-1865*, (USA :Missouri Historical Society Press, 1991), 10-20.

[138] Christian, 57.

[139] O'Connor, 33-34.

[140] Christian, 104-105.

Washington Avenue to the *Palace d' Armes* and hoisted the American flag after an official ceremony.[141] Standing close by were the Chouteau brothers and Lewis and Clark. The brothers became good friends with Lewis and Clark when they arrived in the fall. Pierre was already acquainted with other US officials. Because of Pierre's knowledge of the Native tribes, he was asked to escort a group of Osage to Washington. While in Washington, he took the time to establish a commercial relation with Philadelphia merchant Samuel Kerr.[142] Pierre and August continued to consult the US Government and maintained close contacts with the Spanish in New Mexico. Pierre's offspring August Pierre (A.P.), Pierre Jr., and Francois continued to expand the family enterprises. As of 1812, St. Louis was well established and a staging center for westward expansion.

Trails West from St. Louis toward Santa Fe 1803-1821

Given the lure of dreams of commercial success, merchants and traders persevered in their quest to head to Santa Fe. Indian threats and the pressures of competitive Mexican merchants to have them incarcerated did not hold them back from getting to the city to sell their goods to willing Santa Fe consumers. Between 1803 and Mexican Independence in 1821, numerous American parties ventured west to Santa Fe and many made it. However, what we today call The Santa Fe Trail was yet to be named.

In July of 1804, Illinois merchant William Morison outfitted Juan Baptiste LaLanda and sent him west to trade with the Indians and hopefully make it to Santa Fe. According to his account to Pike in 1807, he made it to Santa Fe in the summer of 1804, sold his goods and decided to keep the money and stay.[143] The following year, another American arrived in Santa Fe. James Purcell was from Bardstown, Kentucky. After losing his horses, he joined another party on the Missouri River and eventually arrived in Santa Fe in June 1805. He took up his carpentry and later returned to Missouri in 1824.[144] Jacques Clamorgan sent an expedition west in the direction of the Platte in August of 1807- supposedly to trade with the Pawnee. They turned south to Santa Fe and arrived on December 12. Clamorgan was welcomed because he was friend of the Spanish.[145] The Commandant of Santa Fe sent them to Chihuahua with his letter of approval. There they sold their goods.[146] They returned to St. Louis in the spring of 1808 and word of their economic success elicited great interest.

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[141] O'Connor, 119.

[142] Christian, 117.

[143] R.E. Twitchell, *The Leading Facts of New Mexico History* (Albuquerque, NM: Horne and Wallace, 1963), 464. (see note 493)

[144] Connor and Skaggs, 26.

[145] Dary, 56.

The next documented group to head to Santa Fe was that of Joseph Mc Lanahan, James Patterson, and Rubin Smith. They left St. Genevieve, south of St. Louis on December 20, 1809 and were guided by a New Mexican.[147] Hoping for Spanish acceptance, they carried a letter from a priest in St. Genevieve. On their arrival in Taos in February, the letter of introduction was worthless. They were arrested and escorted to Santa Fe. The Santa Fe authorities assumed they were American spies and sent them in chains to Chihuahua (Mexico). There they languished- working in the mines until they were released and returned to St. Louis in the spring of 1812.[148]

Even before the Mc Lanahan group returned to tell of their hardship, James Baird and Robert McKnight, along with ten others, began their trek toward Santa Fe in April of 1812. They too were captured near Taos in April. Their goods were confiscated and sold at auction. The members were imprisoned at Santa Fe and later tried and convicted on a charge of conspiracy. They were suspected of being involved in revolutionary plans for Mexican independence. Unfortunately, these men were not released until 1820- at which time many returned home while some stayed in Chihuahua.[149]

The lure of fur trapping and Santa Fe trade did not stop others from trying. A new generation of Chouteau men was ready to head west. As the Baird-McKnight group awaited trial in New Mexico, August (A.P.), Chouteau (Pierre's son), and Julian de Mun left St. Louis on September 10, 1815 and entered into present day Kansas- looking for the Arkansas River.[150] Their primary purpose was trapping but limited contact with authorities in Santa Fe lead them to organize another trapping excursion in 1817. This time they hoped for a better reception on the part of the New Mexico authorities. Such was not the case. On May 24, 1817 they were arrested and taken in chains to Santa Fe and jailed for forty-five days before they were released. The estimated value of their confiscated property and goods was more than $30,000.[151]

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[146] J. J. Hill**, '**An Unknown Expedition to Santa Fe in 1807', *The Mississippi Valley Historical Review*, Vol. 6 issue 4, 1920, 560–562. , http://doi.org/10.2307/1886474

[147] Connor and Skaggs, 29.

[148] Dary, 57

[149] Connor and Skaggs, 30.

[150] Christian, 217.

Two years before the 'Santa Fe Trail' was put on the map by William Becknell, David Meriwether attempted a trip but it was cut short when he too was captured and hauled into Santa Fe. Released one month later with the help of a Catholic priest, he left the Palace of Governors Palace jail and was told never to return. Ironically, he did return in 1853 as the third American Governor of New Mexico.[152]

From the above examples, the 'Santa Fe Trail' was a work in progress and not an American conception until after 1821. Between the Mallet brothers in 1739 and the last Americans into Santa Fe before Mexican Independence, many individuals with varieties of motives, successes, and hardships ventured west creating numerous paths toward Santa Fe. On August 24, 1821, Mexico's independence was recognized after more than a decade of revolutionary activity. Thereafter, the future of American trade with Santa Fe would only improve as Mexico's policy of trade changed.

As of 1821, life along the Mississippi and Missouri rivers was very busy and increasingly complex. In 1821, Missouri was admitted to the union as a slave state. St. Louis, having served as the territorial capital and site for the constitutional convention, gave way to Jefferson City as the eventual capital. Only one street was paved but a multitude of transportation conveyances were seen on the dirt streets.[153] The population of the city had increased from about 1,500 in 1803 to near 5,500 with over 60,000 in the St. Louis area. [154] [155] The movement of settlers up the Missouri from St. Louis and St. Charles toward what would become Franklin, New Franklin, Independence, Westport, Westport Landing, and Kansas City was well underway.

Becknell and The Santa Fe Trail

Born in Virginia around 1787, William Becknell migrated to St. Charles, Missouri around 1810. After participating in The War of 1812 he bought land and settled near what became Franklin, Missouri in 1816.[156] [157] The Panic of 1819 caused him to reconsider his financial status and in doing so he decided to put together a trade group and head west like others before. He assumed this venture would be different as a result of Mexican independence. Numerous descriptions of his trip are available and as discussed in those sources many aspects of his experience are debatable. On September 1, 1821, with a small company of five men and pack horses, they traveled ten mikes to Fort Osage, near the future town of Independence. Then they headed west across the plains.

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[151] Dary, 6.

[152] http://newmexicohistory.org/people/david-meriwether

[153] O'Conner, 204.

[154] Dary, 63.

[155] www.stlouis-mo.gov/archive/history-physical-growth-stlouis/#terr

Rain and sickness presented them with challenges by the 20th. Twenty-four more days and they arrived at the Arkansas River and took a left hand fork on the 21st. The cliffs become immensely high, and the terrain of the country was rugged, wild, and dreary.[158] This location is the confluence of the Arkansas and Purgatory Rivers (La Junta, CO). The Purgatory River was the 'left hand fork' but, according to future analysis, they did not continue down the Purgatory but the Chacuaco Creek, a tributary of the Purgatory. Once they exited the rugged area, they continued southwest across the present day border of Colorado and Mexico and through the area of old volcanic flows. Their southwest journey then took them near present day Springer, New Mexico.[159] On the morning of October 13th, they met a large contingent of Mexican soldiers just south of present day Las Vegas, New Mexico.

The diary entry of Captain Don Pedro Ignacio Gallego, Militia Urbana of New Mexico, describes the meeting. Gallego was coming out of Abiquiú with some 400 troops on an expedition to follow the trail of Comanche Indians. Note that Gallegos's time is different from Becknell's. Also note that Becknell calls Gallagos's El Vado, St. Michael (San Miguel del Vado).

> *Left Ojo de Bernal about 9 a.m. Followed the usual formation. About 3:30 p.m. Encountered six Americans at the Puertocito de la Piedra Lumbre. They parleyed with me and at about 4 p.m. We halted at the stream at Piedra Lumbre. Not understanding their words nor any of the signs they made, I*

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[156] Dary, 68.

[157] Stephen G. Hyslop, *Bound for Santa Fe: Te Road to New Mexico and the American Conquest 1806- 1848* (Norman :University of Oklahoma Press, 2002), 37.

[158] https://chribbs.wordpress.com/documens/becknell-documents/1823-journal-of-william-becknell/

[159] www.santafetrail.org/the-trail/history/best-of-wagon-tracks/DIARY_OF_PEDRO_IGNACIO_GALLEGO.pdf

> *decided to return to El Vado, in the service of your excellency. At this point Vicente Villanueva presented himself.*
>
> *This day about 1:30 a.m. Vicente Villanueva presented himself to me with five citizens of El Vado, to serve as an interpreter. Learning nothing new I left them [the Americans] with him to present themselves to your excellency. Then, at about 6 a.m. I resumed my march, separating a party of 100 men under Corporal Lucero with the intention of following the trail of the Americans. Halted at about 3 p.m. at the Cañon del Pecos and at about 4 p.m. the party under Corporal Lucero returned, having lost the trail of the Americans at the falls of the Río del Sapello. Nothing further occurred.*[160]

On November 15, Becknell left St. Miguel and passed another village and the remains of what he called an ancient fortification. This was no doubt the present day Pecos National Historic Park. On the 16th they arrived in Santa Fe. A month later, Becknell traveled back to San Miguel and left for home on December 13, 1821- taking a different route (Cimarron Cutoff) that more approximates the Santa Fe Trail we think of today.

Note

Prior to 1821 and soon after, the Santa Fe Trail was never a uniform easily marked trail but rather varied routes from various cities on the Missouri. The routes were determined by available water, forage, conditions of rivers, and reports of potential Indian attacks. Apart from what became the primary route, the Cimarron Route (Cimarron Cutoff or Crossing) came into favor because it reduced the distance and time to 100 miles and ten days- but it too presented potential problems (water, forage).

Another variation was the Mountain Branch which became popular in the 1830s. In 1833, William Bent and Ceran St. Vrain (traders) built a fort on the Arkansas River to trade with the Plains Indians and trappers. The purpose of the fort (trade) was to compete with Fort William (Fort Laramie, WY). The fort located just east of present day La Junta, Colorado became a stopping off point for travelers and traders who chose not to use the Cimarron Route, but instead use the Mountain Branch which split off the Santa Fe Trail at the Cimarron Crossing.

Those choosing the Mountain Branch continued west up the Arkansas River- stopping at Bent's Fort. After resupplying, they continued southwest, parallel to what is today route 350 to Trinidad, Colorado and then south over Raton Pass. Once over the pass, they traveled south, parallel to what is today US Route 25, and joined up with the trail from the Cimarron Branch. From there they combined with other wagons and continued on to Santa Fe by way of Las Vegas (est.1835) and Fort Union (after 1851). If Santa Fe was a secondary destination, they could choose to continue west from Trinidad, into the San Juan Mountains (Southern Rockies) and then south to Taos.

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[160] Ibid.

Regarding the topic of supply chain, knowledgeable traders usually chose the Cimarron Branch because of the mountainous terrain but sometimes they used the Mountain Branch if reports regarding the Cimarron Route were negative. Not until the 1860s was a road built over the pass.

Individuals and Groups Working the Santa Fe Trail

The list below consists of individuals and groups who organized trips to Santa Fe between 1821 and 1860. Note the ever increasing number of horses, wagons, and men engaged in the supply chain process. There is no attempt here to develop descriptions or details because others have already written on the subject. In many instances diaries are available and provide great insights into the individual journey. The point to be emphasized is the activity increasingly expanded and over time consumer demand in Santa Fe created an ever more complex supply chain that extended from numerous resource and manufacturing locations in the United States and around the world.

1820s

James-McKnight (May 1821)

Glenn-Flower (September 1821, Fort Smith, AK))

Becknell (September, 1821, Boone's Lick, MO)

Becknell (May, 1822, Arrow Rock, MO)

Cooper (May, 1822) 12 men, pack horses

Baird and Chambers (1822)

Bartow (August, 1822)

Stephen Cooper-Joel Walker (May 1823) 30 men, 60 horses

Antoine Robideaux (1823) 6 men

Caravan (May, 1824 Franklin, MO,) A. Le Grand, M.M. Marmaduke, William Becknell, Augustus Storrs, 81 men, 25 wagons, 156 horses/mules

Ezekiel Williams (May, 1827, Franklin, MO) 53 men, 105 wagons, Charles Bent (1829) 70 men, 40 wagons, first with military escort

1830s

Charles Bent (May 1830 Independence) 130 men (including Ceran St. Vrain), 60-70 wagons, first expanded use of oxen

Stanley (May, 1831, Independence) 200 people (including Josiah Gregg at 24 yrs years of age), small cannons, merchandise

William Sublette, David Jackson, Jedediah Smith (May, 1831) 80 men including Thomas Fitzpatrick), 20 wagons/ Smith killed by Comanches

Josiah Gregg (1834, Independence) 160 men, 80 wagons, printing press, escorted by military

Annual Caravan (1835, Independence) 140 men (40 traders), 75 wagons,

Annual Caravan (1836, Independence) 135 men (35 traders), 75 wagons

Annual Caravan (1837, Independence) 160 men (including Josiah Gregg), (35 traders)

1838 commerce affected by Pueblo Revolt in Taos.

Waldo: Alvarez Caravan (April 1839, Independence) 93 men, 53 wagons,

Caravan (July 1839, Independence) 18 traders, several wagons, several people including 29 yr old Matthew "Matt" Field

1840s

New Route to Santa Fe via Arkansas River to Raton Pass

Caravan (1843)

Trade route closed by Mexico in August, 1843 Opened March 1844

Caravan (Spring Caravan 1844 cancelled)

Caravans (Fall 1844, Independence)

- Col. Owens- 40 men, 23 wagons, 50 yoke oxen, 150 mules, included in this group was James. J. Webb
- Charles Bent and Ceran St. Vrain- 20 wagons to Fort William (Bent's Fort)
- Albert Speyer- 20 wagons

Connely and Glasgow- 20 wagons

Caravans (May, 1845, Independence)

James Josiah Webb and partner George Doan (May 1846, Independence)

Caravan (June 1846, Independence,) 45 wagons, One trader Samuel Magoffin and wife Susan (diary) traveled behind General Kearney's army.

Caravans (Spring 1846, Independence) thirty-nine firms sent 351 wagons, 12 kitchen wagons, 50carriages, 750-800 men

Caravan (October, 1846, Independence)

Norris Colburn- 19 wagons,

Kean and Hall- 9 wagons

Caravan (October, 1846, Westport, MO)

Ceran St. Vrain- 23 mule drawn wagons , in this group was Hector Garrard (author of *Wah-To-Yah and the Taos* Trail)

1850s

Caravan (April 1853) 40 men, 35 wagons,

Charles Kearney and William R. Bernard (1853, Westport, MO) 600 wagons during the year

Kearney and Bernard (1854, Westport, MO) 822 wagons during the year

Kearney and Bernard (1855, Westport) 1,217 wagons during the year

The *Kansas Press* published that as of 1859 at least 1,510 wagons had headed west to Santa Fe in 1858.

CHAPTER SIX

The Santa Fe Trail Trade Goods

HOUSEHOLD ITEMS

Barrels, Buckets, and Casks: (The Profession of Coopers) Coopers produced casks that bulged in the middle as well as straight barrels. Dry casks were designed to keep goods moisture free during shipping (flour, gunpowder). White cooperage (straight staves) was used for washtubs and butter churns. The wet-tight cooper maker made casks for transport of liquids. Over four hundred different barrel making machine inventions were patented in the United States between 1844 and 1883. In the early years these products came from the east coast, but increasing more came from developing cities on the Ohio, Mississippi, and Missouri rivers.

https://en.wikipedia.org/wiki/Cooper_(profession)

www.fohbc.org/PDF_Files/WhiskeyBarrels_DYates.pdf

http://woodenbarrelwarehouse.com/cooperage-ancient-art-barrel-making/

Barrel Keys (See also Locks Below): This is a lock with an inner cylinder that turns on an axis inside an outer cylinder. To open the lock, several spring-loaded, separate pins (tumblers) needed to be aligned by the teeth. The key was small, thin and easy to carry in a pocket or key case. The first serious attempt to improve the security of the lock was made in 1778 by Robert Barron in England. In 1784, Joseph Bramah received a patent for his new lock. By 1818, Jeremiah Chubb made further changes. In the 1830s, James Terry established Eagle Lock Company and America's lock-making center in Terryville, Connecticut .

www.bramah.co.uk/default.asp?lnc=about_history

www.historicallocks.com/en/site/h/other-locks/entrance-door-locks/the-cylinder-lock-/

http://inventors.about.com/library/inventors/bllock.htm

http://gizmodo.com/the-history-and-future-of-locks-and-keys-1735694812

www.lockmuseumofamerica.org/founders__the_legacy0.aspx

Basic Straps: (*cinta para ataderas*) Straps to 'tie things together' would most likely be leather products. They would have been the basic material for creating specific straps for varieties of purposes. Spur straps were used by the cowboy to get the best out of his mount. Straps tied trunks and any type cargo containers and could be used as springs on wagons and coaches. By 1800, there were 2,000 tanneries in the United States. An American, Samuel Parker, further advanced the tanning industry in 1809 by inventing a machine to split hides.

> www.cochiseleather.com/western-spur-straps.aspx
>
> http://northernwoodlands.org/articles/article/hemlock-and-hide-the-tanbark-industry-in-old-new-york
>
> www.referenceforbusiness.com/industries/Leather/Leather-Tanning-Finishing.html

Bead String: (See Thread/ Household and Fabric)

Bedspreads: After 1800, printed cottons were available from Europe. Women took pieces and applied (*appliqué*) them onto white bedcovers to make coverlets and quilts. With the invention of the Jacquard Loom (1801), professional, and more elaborate patterns were created by men in solitary and or six person “factories” or workshops in Europe. The loom came to America in 1820 and by 1830, British and German immigrant weavers had settled in New York, Pennsylvania, and New Jersey and established the American industry. Purchased coverlets were highly popular in the 1840s. They were most in demand in rural areas and moved west with the population. There were also summer/ winter coverlets with one side dark (winter) and the other side light (summer).

> Amelia Peck, "American Quilts and Coverlets." Heilbrunn Timeline of Art History (New York: The Metropolitan Museum of Art 2000) www.metmuseum.org/toah/hd/mtqc/hd_mtqc.htm
>
> http://char.txa.cornell.edu/ppeamericatex.htm
>
> http://web.co.wayne.ny.us/office-of-the-county-historian/weavers-of-wayne-county/

Bells, (Small and Table): Early bells to Santa Fe may have been produced by the oldest English manufacturer, Whitechaple Bell Foundry, located east of London. Paul Revere and Son Foundry (1818-1828) listed 84 bells in their stock book. The E. A. & G. R. Meneely Bell Foundry of Troy New York was established in 1826. By 1850, they cast 600 bells a year. East Hampton, CT. became known as 'Bell Town USA' and was home to 30 bell makers, including The Blevin Brothers Manufacturing Co., founded in 1832. As the decades passed, bells might have come from foundries beyond the Appalachians. At least 35 different business enterprises are known to have made, sold or advertised bells in the city of St. Louis including the Marcus O'Hara Foundry (1842-1847).

www.towerbells.org/BellFoundries.html

Leander J. Bishop*, A History of American Manufacturers from 1608-1860,* Third Edition, 1868, Volume III, (New York: Augustus M. Kelly Publishers, 1966)

www.bevinbells.com

www.whitechapelbellfoundry.co.uk/index.htm

Bengal Light Fireworks: Although fireworks existed in America before 1800, 'Bengal Light Fireworks' were a special type. They were first created in India by Indian priests for pyrotechnic religious festivals. Originally they consisted of Potassium chlorate, icing sugar, strontium nitrate, and concentrated sulfuric acid. British Royal Society Fellow William Cosgrove (early 1800s), took the Indian technique and developed a 'rocket-product' the type that was witnessed by Francis Scott Key at Fort McHenry, Baltimore in 1814. These rockets that 'glared red' were used by the military and later for festive occasions. Most likely the fireworks sent to Santa Fe were from the UK and may have come from Brock's Fireworks Ltd established in 1698.

http://faculty.rmu.edu/~short/chem1215/1215-demos/Bengal-Fire.pdf

http://rsnr.royalsocietypublishing.org/content/63/1/35

http://brocksfireworks.com/our-history

Billiard Balls: Early billiard balls were made of wood, but by 1800 the best ones were produced from African ivory. A lucrative business for importing ivory during the 19th Century was evident at the London and Liverpool Docks. Billiard balls were produced by ivory turners. Five good balls could be taken from the thickest section of one large elephant tusk. The firm of Borroughs and Watts (est.1836) was considered the finest producer of billiard products including balls. Other British firms included Orme and Son (est.1848). *Ivory ball turning was a very skilled job and required an apprentice indenture.*

www.sentex.ca/~bigdog33/pool/history.htm.

www.snookerheritage.co.uk/normans-lectures/billiards-snooker-balls/

www.burroughesandwatts.com/

www.englishbilliards.org/briefHistory1800

Blackboards: James Pillans, headmaster (Old High School of Edinburgh, 1800) created the first blackboard when he pieced together several sheets of slate-probably from the famous Penrhyn Slate Quarry in Wales. In 1801, a West Point instructor did the same. They were used in most Philadelphia schools by 1809. Sources of slate existed from Maine to Virginia but difficult transportation and high costs meant that Wales continued to be the primary supplier until canals and railroads made American slate more available.

> www.slate.com/articles/life/education/2014/10/a_history_of_the_blackboard_how_the_blackboard_became_an_effective_and_ubiquitous.html
>
> http://edfn305spring.weebly.com/history-1600s-1800s.html
>
> www.oldhousejournal.com/npsbriefs2/brief04.shtm

Blankets (Common and Bed): Prior to 1821, there was an attempt to establish an American woolen industry in the Northeast. The Hartford Manufacturing Co. (1788), a company in Bayfield, MA (1794), the Peace Dale Factory in RI (1804) and the Francis C. Lowell Co. in Waltham, MA (1814). After initial success, due to the trade embargo and ultimate war with England (1812), resumption of better and cheaper British imports after 1815 adversely affected American manufacturers until the mid 1830s.

A leading English blanket maker was Thomas Cook of Dewsbury. He had great success in exporting blankets to the United States through Philadelphia after 1815. He also gained an interest in the textile trade in New Orleans that was previously dominated by the French. Witney, England (west of Oxford) also produced fine blankets sent to east coast ports after 1800 but by 1830 consolidation in the industry gave rise to other English woolen centers in Goggs, Hailey, and Crawley.

The famous Hudson Bay Blanket initially made its way to the Southwest with French traders (1600-1700s). After 1821, the Santa Fe Trail supply chain merchants imported them from the Collier and Early and Sons in Witney, England.

By 1837, numerous American companies were producing in Vermont, Rhode Island, Massachusetts, New York and Pennsylvania, but he Panic of 1837 again adversely affected America's industry. By 1855, American woolen manufacturing was doing well but still behind English producers.

> *A Century of American Wool Manufacture* (From the Bulletin of the American Association of Wool manufacturers, September, 1894.) https://archive.org/stream/centuryofamerica00nort/centuryofamerica00nort_djvxt

William Page (ed.), *The Victoria History of the Counties of England: History of Oxfordshire,* Vol II, (London : Archibald Constable, 1907)

tps://books.google.com/books?id=WZo4AQAAMAAJ&pg=PA250&lpg=PA250&dq=Witney+wool+manufacturers+in+1805.&source=bl&ots=luO_wo6M4q&sig=RBOv7y_uldE1pQ99ux5lKIeqIc&hl=en&sa=X&ved=0ahUKEwitqZnuuPvOAhUJ8GMKHc0_D9oQ6AEIHzAA#v=onepage&q=Witney%20wool%20manufacturers%20in%201805.&f=false

Frederick J.Glover, *Philadelphia Merchants and the Yorkshire Blanket Trade 1820-1860*. https://journals.psu.edu/phj/article/viewFile/22797/22566

www.witneyblanketstory.org.uk/wbp.asp?navigationPage=Industrial%20Revolution

www.washingtonhistory.org/files/library/summer-2002-swagerty_003.pdf

Harold Tichenor, *The Blanket: An Illustrated History of the Hudson Point Blanket,* (Toronto, Canada: Madison Press Books, 2002)

Bottle Cases: To difficult to determine

Bowls: **(See Crystal, See Glassware)**

Bone Button Moulds (See also Buttons/ Clothing): The Edinburgh Encyclopedia of 1832 and **The Engineer's and Mechanic's Encyclopedia** of 1836 by Luke Herbert state that such 'moulds' were buttons intended to be covered by some type of material. They were made from pieces of refuse chips of bone. The Sheffield's Directory of 1829 shows nine individual manufacturers of bone moulds.

www.fivenine.co.uk/family_history_notebook/background/buttons/button_mould_turner.html

www.genuki.org.uk/big/eng/YKS/WRY/Sheffield/Sheffield29Dry.html

Button Moulds (See Also Buttons/ Clothing): This type of dome shaped mould was primarily made of wood. It had a hole in the center and was used to give form to the created button. This term could also mean a 'mould' that was used to cast a button from some type of material (pewter, glass, and or ceramic after 1840). The Sheffield's Directory of 1829 shows eleven individual manufacturers of button moulds.

http://trace.tennessee.edu/cgi/viewcontent.cgi?article=1042&context=utk_chanhonoproj

Jennifer Aultman and Kate Grillo, *Cataloging Manual: Buttons*, 2003 (updated 2012) http://www.daacs.org/wp-content/uploads/buttons.pdf

Candles/ Candle Moulds: Common candles were made of 'tallow' (rendered animal fat). These candles burned fast and dirty. In 1823 the French chemist Eugene Chevreul created stearin, a compound of stearic acid and glycerol could be separated from tallow- resulting in a cleaner and longer lasting burn. The Edward Price Candle Company (UK) used this process beginning in the 1830s. By 1850, the company was mass producing candles and became the largest candle maker in the world. In the 1830s, the double braided wick contributed to a sturdier, longer burning candle. Inventor Joseph Morgan (1834) developed a machine that allowed for continuous production of molded candles.

In 1850, paraffin (petroleum) replaced the older candles. The goods list said 'wax candles. This could have been a generic use of the term or specifically related to paraffin. If used generically, two other types could have been sold. One was beeswax and the second spermaceti. Spermaceti candles (from 1750) were one of many products produced from the liquid in a chamber in the whale's head. These candles were clear, brighter, and odorless- the best in the world. They were also expensive.

A major Cincinnati producer was W. H. Woods, established in 1838 by Gross and Deitrich. The Cincinnati company Flagg & Homan (1847) which later became Homan and Company produced 'Britannia Ware (pewter) candle moulds. In 1839, Nicholas Schaeffer established a candle and soap company where the St. Louis Arch now stands. It became the largest manufacturer in the region. In 1849, he helped Eberhard Anheuser rebuild his burned down soap company and that year the joint venture became Schaeffer-Anheuser Soap and Candle Manufacturing. Later Anheuser opened a brewery in St. Louis with his son-in-law Adolphus Busch.

http://simpletimeliving.blogspot.com/p/candles-in-1800s.html

http://candles.org/history/

More expensive ones were made of beeswax.

www.prices-candles.co.uk/history/historydetail.asp

https://dispatchesfrompangaea.wordpress.com/2012/07/17/sperm-candle-spermaceti-sperm-whales-moby-dick/

Albert Nelson Marquis, *The Industries of Cincinnati: The Advantages, Resources, Facilities, and Commercial of Cincinnati as a Center of Trade and Manufacture*, An N. Marquis & Co., 1883.

https://babel.hathitrust.org/cgi/pt?id=wu.89073035123;view=1up;seq=128 (Colorado State University Library).

www.hoosierpewter.com/homan/Flagg_and_Homan.htm

www.schaefferoil.com/cmss_files/attachmentlibrary/100%20Years%20of%20Business.pdf

Candle Snuffers: A device for extinguishing a flame. It could be either a cone at the end of a handle that eliminates oxygen or an actual 'snuffer'- a scissor like device that cut the wick. Given the many British and American companies, it is hard to determine from where snuffers came. **(See Candlesticks Below)**

Candlesticks (Candelabras/Silver Plated): England was well known for quality silversmiths but silver plating was more affordable. Sheffield produced 'Sheffield Plate' for the 'less than wealthy' market. The process fused silver plates on a copper base. British Electroplating developed around 1839. American Jabez Gorham established Gorham Manufacturing in Providence, Rhode Island in 1831. After the 1842 tariff on imported silverware, Gorham did not take advantage of the protection but later his son did by continuing to develop new products and expand manufacturing. Identifying a specific producer without seeing the 'maker's marks' is difficult.

www.rauantiques.com/library/the-allure-of-sheffield-silver-509.html

www.silvercollection.it/electroplatesilverH.html

www.silvercollection.it/dictionaryADVgorham.html

www.925-1000.com/Gorham_Date_Code.html

Carding Brushes: Derived from the Latin term *carduus*, meaning thistle, these flat hand held wooden 'cards' with handles on one side and wire -like pins on the other side were/are used for separating fibers (animal and vegetable). In 1797 American Amos Whittlemore was granted a patent for a machine that produced wooden cards. Several companies like L. S. Watson and Co. (1842) manufactured cards in Leicester, MA.

http://scua.library.umass.edu/ead/mums153.pdf

www.kovels.com/collectors-questions/carding-paddles.html

Cases: This item covers so many different types of cases for numerous uses that specific identification is too difficult.

Chain Dog Collars: ?

Chest Bolts (**See Also Locks below**):

Cinch Straps: The strap was a piece of tack used to keep a saddle or pack in place on an animal's back. It was generally a leather strap attached to the saddle at one end and to a cinch under the animal's belly. The 'cinch' was a braided piece made from a variety of materials (leather, rope, felt, cotton, wool) and had rings attached on both ends. The tanning industry was evident in eastern Pennsylvania as early as 1800. Hemlock and oak were used in the process. The Stroud tannery began in 1820 and sold out to the DePue family in 1833. By 1841, Jacob Singmaster operated a tannery in Stroudsburg, PA. Captain Jasper Peery created one of the first tanneries in Missouri after 1819. Kit Carson was apprenticed as a harness maker in Franklin until 1824 when he left for the west. Authority Will Ghormley stated the reason people in Santa Fe desired this particular product was that Missouri 'oak tanned' leather was superior to the Spanish 'urine tanned' product. Although many of the saddles of the southwest used more rawhide (un-tanned but durable), 'oak tanned' leather was durable yet pliable.

www.western-saddle-guide.com/cinch.html

www.discoverclocks.com/clock_companies.html

History of Howard and Chariton Counties, St. Louis National Historic Society, 1883
https://books.google.com/books?id=BtIyAQAAMAAJ&pg=PA765&lpg=PA765&dq=history+of+missouri+tanneries&source=bl&ots=C2FnW_osBE&sig=_xxNeymNVvVCFaYLk5X3EFoOMy0&hl=en&sa=X&ved=0ahUKEwjorZacrY3PAhVl5YMKHa7rD1UQ6AEILzAD#v=onepage&q=history%20of%20missouri%20tanneries&f=false

www.willghormley-maker.com/saddles.html

Clocks (Large, Common, Wooden, Metal, Toy, Sun): Given the fragility of clocks and transportation issues, English clocks most likely did not make their way to Santa Fe in the 1820's and early 30s. American made clocks most likely filled the orders. By 1700 there were many American clock makers in the colonies -mostly in the Boston and Philadelphia areas because of wealthy patrons. The 1800s was considered the 'Golden Age' of American clockmakers.

Pennsylvania had clockmakers in twelve counties. New England clockmakers Simon Willard, Seth Thomas, Eli Terry, Chauncey Jerome, Elias Ingraham, and Elnathan Taber developed new materials, new designs and marketed them around the world after 1820. Hand crafted clocks by German artisans were displaced by 30 hr. wooden wheel clocks and 8 day brass clocks manufactured in New England. By the end of the 1840s, handcrafted clockmakers were relegated to repair and sales of

Connecticut clocks. Sundials, classified as a mathematical instrument, were created by clockmakers and had to be custom designed for latitude. Prominent craftsmen in London included Dollond, Troughton, Bird, Adams, and the famous Parkinson and Frodsham. Other instrument makers were located in Liverpool, Derby, and Edinburgh. Dials were usually signed by the craftsman.

www.2-clicks-antiqueclocks.com/article/antique-american-clocks-identification.html

www.garysullivanantiques.com/Research/EarlyAmericanClockmakers/SimonWillard.aspx

https://clockhistory.com/sethThomas/company/

http://www.newenglandhistoricalsociety.com (rise and fall of Chauncey Jerome-Connecticut clockmaker)

www.watchesnsuch.com

http://nawcc.org/images/stories/publications/pa_clocks.pdf

Correspondence with Mr. John Davis, Flowton Dials, Suffolk, UK

http://americanhistory.si.edu/collections/search/object/nmah_1277064

www.flowton-dials.co.uk/

Clock Winding Keys: Normally made by clock makers.

Coal Briquettes: This product (wood or coal) would have been very utilitarian because of the lack of fuel sources in Santa Fe. Wood was the primary source but coal briquettes would have been a welcome new source after 1850. This product was produced by burning wood or coal in a low oxygen atmosphere. The moisture and gasses were eliminated and the final charred material would provide a longer, hotter, and much lighter material (1/5th to 1/3rd). If the actual product was made from coal we know that the first patent for coal briquetting was the mid 1800s and coal briquetting became prevalent in the 1870s. Given the fact that briquettes (wood then coal) were made in areas from Pennsylvania to Missouri, identifying specific manufacturers was not possible.

www.madehow.com/Volume-4/Charcoal-Briquette.html

www.slideshare.net/sauravchemical/coal-briquitting

Coffee Mill: Coffee mills (grinders) came in numerous shapes and sizes. The first US patent for a wall mounted mill was granted to Thomas Jefferson's dentist in

1798. Alexander Duncan Moore was granted a patent for an improvement in 1813. In 1829 Charles Parker of Meridian, CT. improved on the cutting mechanism, received a patent and contracted with Patrick Lewis to make the first household coffee and spice mills in 1832.

Thereafter, patents were issued to Ammi Clark, of Berlin, CT. and John Rittenhouse of Philadelphia for new designs. A patent for a hand-held cast iron and steel mill was given to Livingston and Adams (Kentucky) in 1840. One was recovered in the steamboat Arabia excavation in 1987 and can be seen at the Arabia Museum in Kansas City, MO. A Pittsburgh company (Cutler and Weir) was producing grinders in the 1840s.

http://nbindustrial.org/collection/landers/

www.ehow.com/how-does_4855140_identifying-antique-coffee-grinders.html

http://knowyourgrinder.com/coffee-grinder-history/

www.web-books.com/Classics/ON/B0/B701/39MB701.html

www.ehow.com/about_5497761_history-coffee-grinders.html

www.antiquecoffeegrinderstore.com/charles-parker-antique-coffee-grinders-for-sale.html

http://kyhistory.pastperfectonline.com/webobject/F332A50D-2D43-45B6-AA59-710871054929

www.worthpoint.com/worthopedia/antique-coffee-grinder-adams-mill-470348815

http://1856.com/

Corks: The popularity of cork as a stopper led to deliberate cultivation of cork trees after 1760. After growing for 20 years to a height of 40-60 feet and 6-10 feet in diameter, the cork was harvested from the outer bark of evergreen oak (*Quercus suber L)* primarily in Portugal and Spain. Thereafter it was harvested (renewable resource) from the same tree in 8-10 year intervals. The trees can live up to 100 years. The first corks were conical. In 1830, the first equipment for inserting corks under pressure was invented. This product could have come by way or the east coast or Mexico City.

www.madehow.com/Volume-5/Cork.html

www.mantoncork.com/cork/

www.amorim.com/en/why-cork/brief-historical-overview/

www.corkinstitute.com/unusualharvest.html

Cork Inkwells (Bottles): (See Glass Below) Ink wells and bottles were designed for stability. Cylindrical bottles were either conical (tapered inward to a neck) or no taper. The normal well held 2-4 oz of ink. The conical style originated in America in the 1830s. Early American wells were produced by glass makers in New England as well as New Jersey (Whitney Glass Works, NJ.). The second most popular shape was the square or rectangle. The Pitkin Glass Works in Connecticut (1783-1830) was well known for inkwells in a swirl shape. Some twelve-sided wells were in existence in the 1840s. As a result of expanded postal service and cheaper postage stamps after 1850, correspondence greatly expanded giving rise to a demand for writing accessories. Without a makers-mark identifying the period and the company, knowing when the inkwells went to Santa Fe is difficult.

https://sha.org/bottle/household.htm#Small ink bottles

www.peachridgeglass.com/2012/08/looking-at-labeled-carters-cone-inks/

www.glassmuseum.org/glassworks2.htm

Winifred Gallagher, *How the Post Office Created America*, (New York: Penguin Press, 2016)

Corkscrews: The first corkscrew patent (worm screw) was issued in 1795 to Rev. Samuell Henshall in Oxford, England and then produced in Birmingham. The second patent was issued in 1802 to Sir Edward Thomason. As the screw turned, the cork dislodged. Then a reverse turn removed the cork from the screw. Robert Jones (Birminghan, England) produced corkscrews after 1829 and Edward Cotterill and Company (Birmingham) became the largest producer of corkscrews after 1840. American corkscrew manufacturers did not emerge until the 1870s. Corkscrews to Santa Fe were either from unique American makers or, like other products, from England.

http://vinepair.com/wine-blog/history-of-the-wine-corkscrew/

www.corkscrewcollecting.com/introduction.html

www.corkscrewcollecting.com/robert_jones_corkscrews.html

www.vintagecorkscrewcenter.com/some-famous-corkscrew-makers/the-story- of-edwin-cotterill,-wolverhampton-16529620

Cruets: (See Glassware Below) a small container for salt, pepper, oil, or vinegar for use at a dining table.

Crystal Products (Bowls, Glasses, Lights, Salt Shakers): The Netherlands, Czechoslovakia, England, Ireland (Waterford), and the City of Venice were best known for glass and crystal production. American Crystal production did not commence until after 1870. This product probably made its way to Santa Fe after the Civil War or before as a result of orders from Europe.

> www.madehow.com/Volume-4/Lead-Crystal.html
>
> www.waterfordvisitorcentre.com/content/history-waterford-crystal

Cups and Saucers (Coffee, Espresso , Tea, Chocolate): Prior to the early 1800s, coffee cups (2.5" X 2.5") were made of metal, and hot to handle. The creation of porcelain and bone china in England solved the problem. The earliest 'tea cups' (Chinese) were small bowls brought to England in the 1700s by the East India Trading Company. They too were later replaced by porcelain and bone china. The tea saucer was fashioned with a small indentation to hold the cup (3" X 3.5").

Chocolate drinking arrived in America in 1765 with the opening of the Walter Baker & Company in New England. The chocolate cup measured 2" X 2.5" with a 4" X 4.5" saucer. There is evidence of Chinese porcelain (Kraak Style) in Santa Fe as early as the 1600s as a result of the Manila galleon trade. The earliest china products for the wealthy in the United States came from England via British importers.

Chinese porcelain making techniques were emulated by numerous English establishments in the 1700s. Among the excavated artifacts from the Arabia Steamboat were Davenport stone china and Wedgwood plates. John Davenport established an enterprise at Longport, England in 1794. Three generations carried on the business which became William Davenport and Company in 1869. Josiah Wedgwood started his company in 1759. From that time on, the company experienced numerous owners. Wedgwood was primarily known for earthenware but it produced bone china between 1812 and 1829.

The first American attempts at producing porcelain date back to South Carolina in the 1730s but little is known about the enterprises. The first producer may have been a Wedgwood defector (John Bartlam) who moved to South Carolina in 1763. In 1828, David and James Henderson (Scots) took over a New Jersey porcelain company and began manufacturing English-like ceramics. US:China trade was well established in the 1830s and imports of Chinese porcelain most likely came with the clipper ship trade. The American Porcelain Manufacturing Company was established in 1854.

> http://demiq-demitasse-cups-saucers.blogspot.com/2011/03/history-of-cup-saucer.html

www.unm.edu/~toh/china/cp-in-nm.html

www.thepotteries.org/potters/davenport.htm

www.potteryhistories.com/page99.html

www.wedgwood.co.uk/history

www.chipstone.org/article.php/390/Ceramics-in-America-2007/John-Bartlam:-America%E2%80%99s-First-Porcelain-Manufacturer

www.metmuseum.org/art/collection/search/14494

www.collectorsweekly.com/china-and-dinnerware/overview

http://teachingresources.atlas.illinois.edu/chinatrade/introduction04.html

Curio Boxes: During the Victorian Era (1832-1901) curio boxes, usually associated with women, were actually used by men to display their curiosities (shrunken heads, stuffed animals, special trinkets, etc). It is difficult to determine what specifically was sent to Santa Fe and whether the boxes were for men, women, or both. Most likely companies making furniture would have produced this item.

www.wisegeek.com/what-is-a-curio-box.htm

Note on Hardware

Below are listed numerous items (**chest bolts**, **curtain nails**, **door hinges, door knockers**, **door plates**, **hinges**, **locks**, **metal rings**, **padlocks**, **thumb latches**, and **wire**) all of which could be listed under the heading 'hardware'. Their separate listings below have been maintained for ease of reading. American hardware manufacturing did not get established until 1850. The great majority of hardware products were manufactured in the Birmingham area of England. There was a Cincinnati wholesale/ retail dealer who imported hardware from Europe and the east coast. The C. Wayne and Co. opened in 1824. Most products were hand forged until after 1850.

Curtain Nails: Until the late 18th century and early 1800s, nails of all types were hand forged and square headed. In 1606, Englishman Bevis Bulmer designed a device that could cold-cut square sections from a thin wrought iron bar. He then paid local folks to finish the nail on their home hearth. The same approached was used in early America. In 1790, Benjamin Longstreth established America's first nail factory (French Creek Nail Works) northwest of Philadelphia. In 1809 they cut the first machine nails and became known as the Phoenix Iron Works in 1813.

Phoenixville became the largest nail factory at the time. As the population and commerce moved west, so did nail production.

Jared Pratt and Son (Tremont Nail Company) produced nails using this system in Wareham, MA. in the 1820s. They later moved to Harrisburg, Pennsylvania and produced nails until the late 1850s. Today, Pratt family members continue the craft at Acorn Manufacturing 35 miles from Wareham in Mansfield, MA.

By 1825, nails were being produced by owners Bowen and Shoenberger in the Pittsburgh area and production showed up in Indiana. Wheeling, WV eventually became the nail producing capital. A plant with fourteen machines was established there in 1834.

After 1830, British and the American machines began to 'cut' nails with a similar shape. Nails were manufactured near Covington, Kentucky, across the Ohio River from Cincinnati, in 1829. The Benwood Nail Works became the first iron works dedicated exclusively to making nails west of the Appalachians in 1847.

www.piehtoolco.com/Product_Info/nailheading.htm

Albert Nelson Marquis, *The Industries of Cincinnati: The Advantages, Resources, Facilities, and Commercial of Cincinnati as a Center of Trade and Manufacture*, An N. Marquis & Co., 1883. https://babel.hathitrust.org/cgi/pt?id=wu.89073035123;view=1up;seq=128 (Colorado State University Library).

www.fourshee.com/history_of_nails.htm

www.tremontnail.com/

www.hspa-pa.org/iron_works.html

www.ohiocountylibrary.org/wheeling-history/2765

https://uccshes.files.wordpress.com/2012/09/nail-chronology-the-use-of-technologically-derived-features.pdf

James More Swank, *History of the manufacture of Iron in All Ages: And Particularly in the United Stated from 1585-1885*, **(**Philadelphia, 1884) Colorado State University Library Storage S-1-20D-03=03-031

http://socialarchive.iath.virginia.edu/ark:/99166/w6tj3gfj

James L. Garvin, *A Building History of Northern New England* (Hanover: University Press of New England, 2001)

Disentangling Combs:(**See Combs and Brushes (Beard)/ Personal Use**)

Door Hinges: **(See Hinges Below)**

Door Knockers: This product did not become widely sold in the United States until after 1840. Those that existed prior to this time were primarily English. The Georgian (1714-1830) and Regency (1811-1837) Periods produced beautiful foundry doorknockers. The lion's head and other animals were popular knockers. English knockers were first made of cast iron, wrought iron, and brass in the later 1830s. American knockers were hand forged wrought iron or cast iron.

www.oldhouseonline.com/hardware-in-context/

https://janeaustensworld.wordpress.com/2012/05/01/lion-door-knockers-in-georgian-britain/

www.priorsrec.co.uk/blog/georgian-doors-and-door-furniture/

Earthen Cooking Pans (Earthenware/ Ceramic): The production of earthenware is as old as the nation. Prior to 1800, cheaper English products suppressed American earthenware production. Jefferson's 1807 trade embargo gave rise to indigenous producers and limited success through the War of 1812. Thereafter, cheaper English goods again flooded the eastern market. The American Pottery Company (1833) became a premier producer in the east along with other notables. By the 1840s, many manufacturers had moved into western New York, Pennsylvania and beyond. East Liverpool, Ohio (40 miles northwest of Pittsburgh), became America's pottery capitol. Along with established enterprises in Roseville, Zanesville, and Crooksville, Ohio, they produced over 50% of America's ceramics after 1840. In an 1832 cookbook (*The Cook's Own Book*), a specific reference is made to 'earthen pans' (red)- as contrasted to regular pans. There also existed numerous shapes and sizes.

http://digitalcommons.buffalostate.edu/cgi/viewcontent.cgi?article=1316&context=neha

http://artpotteryblog.com/2008/06/ohio-art-potter.html

www.njcu.edu/programs/jchistory/Pages/A_Pages/American_Pottery.htm

http://digitalcommons.buffalostate.edu/cgi/viewcontent.cgi?article=1392&context=neha

Erasers: The John L. Hammet Co, the oldest educational supply company in America, invented the chalkboard eraser in the early 1860s. That said, erasers were in existence before 1800, but the material used was not effective. French scientist Charles de la Condamine collected samples of substance called *caoutchouc* (un-vulcanized natural rubber) while in Latin America and sent it to Europe in 1735. The French Academy recommended using the substance as an eraser in 1752. In 1770, the English scientist Joseph Priestly experimented with a vegetable gum and called it 'rubber'. That same year, Edward Nairne (English engineer) experimented with the gum elastic (*caoutchouc*) and sold it as 'rubber' (to rub off pencil markings). An effective, non-crumbling, rubber eraser did not emerge until Charles Goodyear invented rubber vulcanization in the 1850s. In the late 1850's, the Hyman Lipman Company patented a pencil with a rubber tip. It is possible that this type of eraser could have made its way to Santa Fe by 1860.

www.madehow.com/Volume-5/Eraser.html

www.historyofinformation.com/expanded.php?id=1591

www.referenceforbusiness.com/history/He-Ja/J-L-Hammett-Company.html#b

www.historyofpencils.com/writing-instruments-history/history-of-eraser/

Flask Stoppers: All of the stoppers we think of today: Interior-threaded, exterior-threaded (“screw cap”), Hutchinson “spring” stopper (Rubber gasket inside bottle neck, with metal-loop handle), "Lightning" stopper (ceramic plug held in place by metal loop attached to metal ring around bottle neck), Crown Metal Cap, and pressure cork/wire stoppers came into existence after the 1860s. Unless this item was shipped after this time, the stoppers most likely would have been cork or hand blown glass (solid or hollow stopper).

www.fire.ca.gov/resource_mgt/archaeology/downloads/Bottles.pdf

https://sha.org/bottle/closures.htm

Glassware (Bowls, Flasks, Vials) (See Jars Below): Glassmaking is one of America's oldest industries. Prior to 1780, numerous glass producers were located in the colonies. Production was very limited due to English restrictions on manufacturing. In 1800 there were no American companies specializing in glass tableware. Imports came from any one of dozens of English producers. In 1808, Bakwell and Company began a glass works in Pittsburgh and by 1825 was creating decanters, wine glasses and other glass tableware.

Most of the forty American manufacturers in 1818 made mostly window glass. That year The New England Glass Company opened and began producing quality tableware. Their control of the red lead market allowed them to compete with foreign producers. By 1828, the company was shipping product through New York, Philadelphia, and Baltimore. In 1826, one of its leaders (Deming Jarvis) left to establish The Sandwich Glass Company in Sandwich, MA. After 1840, demand for all types of glass products greatly expanded. By 1850, a new process gave rise to what is called 'early American pattern glass' (EAPG/ Pressed Glass).

Manufacturers produced similar patterns but gave different names to them (bellflower, Wildflower, Westward-Ho, Lion, Thousand Eye, and Three Faces). In 1853, The McKee Glass Company opened in Pittsburgh and thereafter produced dozens of products.

Glass production, west of the Mississippi, did not take off until the late 1850s. Between the years 1820 and 1840, nearly 100 glass manufacturers existed in the US. Many of these were small operations that created utilitarian items such as wine bottles, flasks, inkwells, snuff, and blackening bottles. An excellent source for identification marks is the Society for Historical archaeology. (https://sha.org/bottle/pdffiles/BLockhart_FHGW.pdf)

https://archive.org/stream/newenglandglassc00tole/newenglandglassc00tole_djvu.txt

L. Woodside Watkins*, American Glass and Glassmaking (*New York: Chanticleer Press, 1950) https://catalog.hathitrust.org/Record/002479268 (Colorado State University Library

www.patternglass.com/Factory/NewEngland/NewEng.htm

www.carnivalheaven.com/carnivalglass102/id235.htm

www.antiquesandthearts.com/bakewell-glass-an-american-legacy/

https://sha.org/bottle/pdffiles/Cunningham.pdf

www.atoncer.com/glassware/mckee.htm

https://books.google.com/books?id=rtMDNPHeBIEC&pg=PA233&lpg=PA233&dq=american+ink+stand+1840&source=bl&ots=NlQUU1PDa4&sig=-ZkMrK5cUBVza5Mlm749t2SVU9M&hl=en&sa=X&ved=0ahUKEwjoltGFqd3PAVHImMKHXaFBz4Q6AEIHDAA#v=onepage&q=american%20ink%20stand%201840&f=false

Glazed Tea Mugs: It is doubtful that much pottery came from Europe after 1820 as America had all the natural materials for production. Between 1800 and 1845 the Bell family produced pottery at Hagerstown, Maryland, Winchester, Strasburg Virginia, and Waynesboro, Pennsylvania. A popular form of glazing was salt glazing.

When the kiln achieved its highest temperature, salt was shoveled into the kiln where the vapors condensed on the pottery and mixed with the silica in the clay. This formed a hard, glossy finish. By 1850 most 'pottery shops' had become full scale factories- many of which were located west of the Appalachians.

www.corzilius.org/Narratives/PotteryInAmerica.htm

www.nga.gov/content/ngaweb/features/slideshows/pottery-from-the-index-of- american-design.html#slide_8

Glue: The use of collagen glue (animal protein) dates back to the Egyptians. Glue factories appeared in America in the early 1800s. The 'hot glue' was initially used by furniture makers. American inventor Peter Cooper, known for numerous American enterprises, bought a Manhattan glue factory in 1821 and in 1830 patented a new process for glue and one for gelatin. He monopolized America glue production and created what became known as 'Jell-O'. No doubt others made glue on a small scale in St. Louis and St. Joseph but what went to Santa Fe is unknown without a container.

www.oldbrownglue.com/images/articles/Why_not_period_glue.pdf

www.madehow.com/Volume-5/Glue.html

www.ringwoodmanor.org/peter-cooper.html

http://brooklynology.brooklynpubliclibrary.org/post/2011/08/05/Peter-Coopers-Glue-Works.aspx

Hinges: Hand forged iron hinges appeared during the colonial period and continued into the 1800s. Keep in mind that most hardware came from England through the 1830s. English Clark and Baldwin’s Butt Hinges have been found throughout the United States. The Baldwin foundry was located on the River Severn southwest of Birmingham. Their product was transported via the river to Bristol or Liverpool.

As the population of the United States moved westward, so did hand-forged production of hinges in various shapes and sizes. Eventually companies, using machines, created a variety of hinges for the market. The strap hinge (for doors and gates) became very popular. The Mallory, Wheeler and Company was established in 1834 in New Haven, CT.. The Russell, Irwin and Fredrick T. Stanley Co. was established in 1839. Stanley left the company and started the Stanley Bolt Manufacturing (1839) in New Britain, CT.. Butt hinges (cast iron) were produced around 1850. The Austin Globe Co. made numerous tools and parts including hinges in the 1840s. Prior to 1870, wrought iron hinges were manufactured by at least nineteen companies from the Northeast to Cincinnati and St. Louis.

www.hardwaresource.com/hinge-resource-center/hinge-historyhistorical-development-advances-of-hinges/ (hinge history on left)

www.unlocking-stourports-past.co.uk/foundry/foundry.html

M. Chris Manning, *Just Arrived from the East: Manufactured and Imported Building Materials in Early Nineteenth-Century Indiana* (Master's thesis, Ball State University, 2010) cardinalscholar.bsu.edu/bitstream/123456789/.../1/ManningM_2010-1_BODY.pdf

http://hingedummy.info/hingehistorypage.htm

www.treasurenet.com/forums/what/45749-any-info-m-w-co-padlock.html

www.priorsrec.co.uk/blog/door-hinges/

www.period-homes.com/historic-door-hardware/

www.castironcollector.com/russwin.php

www.angelfire.com/wy/mttools/globe.htm

https://books.google.com/books?id=LB5KAQAAMAAJ&pg=PA143&lpg=PA143&dq=cincinnati+hinge+makers+1840s&source=bl&ots=CQembpelOw&sig=nil2ZG5glWbVPQ7vftnjI9hq7g&hl=en&sa=X&ved=0ahUKEwjThue05pfRAhVBy1QKHa73B8cQ6AEIUDAH#v=onepage&q=cincinnati%20hinge%20makers%201840s &f=false

Household Wire: Ichabod Washburn built a wire facility in Worcester, Massachusetts in 1831. Metal was rolled into smaller and smaller rolls called 'billets'. The billets were heated, lubricated, and pulled through varying sized dies to create wire in various thicknesses and for different purposes including pianos. He produced 2,500 pounds of wire a day in the 1830s. In 1850, he established Washburn & Moen with his son-in-law. It became the largest wire mill in the world. In the 1840s wire rope was patented by Englishman Robert Newell. Jacob Bromwell Company of Cincinnati became a major US supplier of wire among other products in the 1840s.

www.washburn.edu/about/facts/ichabod/washburn.html

https://web.wpi.edu/Images/CMS/Library/MS26_Ichabod_Washburn_Papers.pdfwww.antiquebarbedwiresociety.com/inventors_washburn.html

http://lcweb2.loc.gov/master/pnp/habshaer/ma/ma1500/ma1568/data/ma1568data.pdf www.jacobbromwell.com/about us

Indigo: Indigo (plant and color) comes from a leguminous plant (an above or below ground seed pod). The Spanish cultivated indigo in Latin America in the 1560s. The French and English developed the plant in Latin America in the 1600s and 1700s. It was introduced into South Carolina in 1742 and became the number two major plant after the daughter of a planter cultivated it from Antigua seeds sent by her father. Thereafter, the plant crop and dye production expanded and 'Blue Gold' was exported to England and the colonies. The end process of preparation is dry indigo which could be made into many shapes and sizes all of which were easily transported. As of 1850, most indigo came from the British East Indies, Manila (Philippines), and Colombia.

www.lib.umn.edu/bell/tradeproducts/indigo

www.ancestry.com/historicalinsights/indigo-south-carolina

http://indigoarts.com/exhibitions/indigo-indigo-indigo-dyed-textiles-africa

http://javaburritoco.com/DaufuskieFrontPorch.pdf

http://javaburritoco.com/DaufuskieFrontPorch.pdf

J. R. McCulloch, *A Dictionary, Practical, Theoretical, And Historical, of Commerce And Commercial Navigation*,(Philadelphia A. Hart, 1851) (Colorado State University) https://babel.hathitrust.org/cgi/pt?id=njp.32101075979862; view=1up;seq71

Ink (Powder, Red, Black): The use of inks is traced back 40,000 years ago to cave paintings in Spain and Indonesia. Ink (red, ochre, black manganese dyes) was first used to portray the natural world in the Chauvet Cave in France. Thereafter, the production of ink evolved through time from the earliest natural dyes to modern chemistry. The craft of writing and availability of materials in America was greatly expanded after the French and Indian War in 1763. As with many other products that went to Santa Fe, all stationery materials were imported until American producers appeared. Thaddeus David (New York) began his career in the ink business in 1824. He introduced steel pen ink (Chemical Writing Fluid) in 1827. According to a trade catalog (N.D. Cotton, Boston) published in 1840, only India ink in stick form was available for drafters. In 1849, the Butler Ink Works was established in Cincinnati but superseded by J.J. Butler's ink company which became very famous until Butler's death in 1874. The ink was called iron gall ink and was produced from tannin (from oak tree galls), iron sulfate, gum Arabic (Acacia tree), and water.

www.bottlebooks.com/Butler/Butler%20Inks.htm

www.bottlebooks.com/inkcompanyhistory/Davids_ink_company.htm

www.bottlepickers.com/bottle_articles297.htm

www.officemuseum.com/Pens.htm

http://cool.conservation-us.org/coolaic/sg/bpg/annual/v13/bp13-08.html

Jennifer E. Monaghan*, Learning to Read and Write in Colonial America,* (Amherst and Boston, MA University of Massachusetts Press, 2005)

Ink Stands: The ink stand (Standish) is a tray or a container that holds writing instruments, an ink bottle or well, and other accessories like sand and or blotters and a penwiper (velvet pad) for cleaning ink from a pen. Ink stands were made of base metals (pewter, lead) or white silver for wealthier customers. Porcelain, ivory, and art glass were also used. By 1840, inkstands became more ornate and whimsical. England and France were leaders in this area. The earliest US advertisement for an ink stand was 1847 and the first patent for such a stand was 1858.

http://antiques-art-collectibles.com/collectible/ink_pot_stand.htm

http://antiqueshoppefl.com/archives/jsheluk/inkwells.htm

http://hadleycourt.com/antique-inkwells-the-art-of-gracious-living/

www.officemuseum.com/Pens.htm

Iron Corn Mill Grinder: This product was made of cast iron and used to grind corn for various uses. Prior to consumer grinders, milling was done at grist mills or by individuals using traditional techniques. This product was probably sent to Santa Fe after 1860. The C. S. Bell Company, producers of grain reduction products, was established in 1858 in Tiffen, Ohio.

www.csbellco.com/grinding-grist-mills.asp

Iron Compasses: This item was either a directional/survey compass or compass measuring instrument for design. If it was one for direction/surveying it most likely came from any one of many eastern manufacturers before 1830 or, if after 1830, it likely came from St. Louis where numerous instrument manufacturers were located at that time. The Ryhiner Co. was making instruments as of 1838 and the Blattner Co. became a well know instrument maker after 1840. If it was a design compass for mechanical drawing, similar to one we use today with an adjustable hinge and pencil attached to one leg, it could have come from any number of sources.

www.surveyhistory.org/st__louis_instrument_makers1.htm

Iron Spoons: This entry is another 'generic-like' description which most likely described wrought iron spoons and ladles used for cooking or household chores. Wrought iron, as contrasted to brittle high carbon cast iron, was easily 'wrought' (shaped) and then hammered into numerous products. Pennsylvania led the nation in iron production which was produced in small furnaces until the 1840s when larger mills were built. Prior to 1835, these utensils probably came from Pennsylvania or from hand forged craftsmen. Thereafter they could have come from Cincinnati or St. Louis where iron was initially brought from Pennsylvania. Thereafter, iron ore was mined in southern Illinois and Tennessee.

www.timelesswroughtiron.com/history-of-wrought-iron-s/18.htm

www.carolinarustica.com/history-of-iron-and-steel

http://explorepahistory.com/story.php?storyId=1-9-17

Thomas Senior Berry, *Western Prices Before 1861: A Study of the Cincinnati Market* (Cambridge, MA: Harvard University Press, 1943)

Irons: The first iron made its European appearance in the 1300s. Numerous irons had to be heated and used. In the 1400s, a heating box reduced the need for many irons. Not until the early 1800s with the development of the cast iron stove did the iron change. Cast iron stoves provided a constant cheaper source of heat. By 1820, the typical 15 lb. flat sad-iron was created. Iron consumer products, including sadirons were first produced in Danville, PA. in 1829. Sadirons were among the goods that James Josiah Webb took to Santa Fe on his second trip in 1845. In the 1850s the George W. Ball Company operated the Covington Foundry in northern Kentucky and, among numerous cast iron products, made irons. An iron made by G. W. Ball iron was excavated from the *Arabia* Steamboat and is in the museum in Kansas City.

www.madehow.com/Volume-6/Clothes-Iron.html

www.itourcolumbiamontour.com/towns-to-explore/danville-pa-2/

Ralph P. Bieber (ed.), James Josiah Webb, *Adventures in the Santa Fe Trade 1844-1847* (Glendale, California : Arthur H. Clark Company, 1931)

http://cincinnati.newspapers.com/search/#query=G.W.+Ball&dr_year=1854-1854&offset=5

Jars: (See Glass) In 1795, French inventor Nicolas Appert invented a process for hermetically sealing a glass container for food preservation. The use of high heat in conjunction with exclusion of air preserved food for the French military. In the early 1800s it led to the process of canning. The type of glass jars we think of today (Mason, Kerr, etc.) were machine manufactured after 1890. The 'utilitarian' jars sent to Santa Fe were mouth blown jars (free hand or mould-blown) that allowed for wax to be poured over the contents along with an optional cork.

> https://sha.org/bottle/food.htm
>
> http://historical-american-glass.com/new-jersey-based-early-glass.html

Knives (Flemish, Metal, Common, Butcher, Carpenter's): Until the mid 1830s, Sheffield England dominated the American cutlery market. The major leaders were William Graves Sheaf Works, George Wostenholm, and Joseph Rodgers. Between 1850 and 1863, Corsan Denton Burdkin & Company produced quality knives in Derbyshire, England. Knives from Wostenholm and Corsan Denton Burdkin & Company were excavated from the *Arabia* steamboat site near Kansas City, MO. The Harrington Company was the first American cutlery company established in 1818 in Southbridge, MA. They manufactured surgical equipment and shoe knives.

More American manufacturers were established after 1820. The leading companies were Ames (1829), J. Russell & Co (1834). Lamson & Goodnow (1840s), Landers, Fray &Clark (1853). There is little doubt that Russell knives (Green River knives) made their way to Santa Fe because of the variety and quality. Even with the success of American cutlery, 90% of American cutlery was still imported from England as of 1860.

> Goeffry, Tweedale *Sheffield Steel and America: A Century of Commercial and Technological Interdependence 1830-1930* (Cambridge, MA: Cambridge University Press,1987. https://books.google.com/books?id=Nfk8AAAAIAAJ&pg=PR12&lpg=PR12&dq=Sheffield+Steel+and+America:+A+Century+of+Commercial+and+Technological+Interdependence+1830-1930&source=bl&ots=eAtKX4p0vK&sig=sDmI-kfLmDeOM9l3KwFt8gHL_WU&hl=en&sa=X&ved=0ahUKEwjlnPa_2dPPAhUXHGMKHeIACJsQ6AEINjAF#v=onepage&q=Sheffield%20Steel%20and%20America%3A%20A%20Century%20of%20Commercial%20and%20Technological%2 0Interdependence%201830-1930&f=false
>
> www.invaluable.com/auction-lot/civil-war-era-corsan,-denton,-burdekin-compan-719-c-10233f9ef1

http://auctions.bidsquare.com/view-auctions/catalog/id/952/lot/324572/cowans- auctions-english-bowie-knife-by-corsan-denton-burdekin-co

http://straightrazorplace.com/razors/77599-henry-harrington-razor-americas-first-cutlery-manufacturer.html

http://industrialhistory.org/histories/lamson-goodnow-mfg-co-shelburne-falls/

http://vintagemachinery.org/mfgindex/detail.aspx?id=39

www.mman.us/jrussellco.htm

Leather Razor Straps (Strops): This product was/is used to sharpen a straight razor, knife, or a woodworking tool. As was the case with razors, Sheffield, England was the location for razor strap makers. In 1810, American Charles H. Emerson opened the Emerson's Elastic Razor Strap Company in Charlestown, Massachusetts. Straps were sold until his death in 1835. Belknap Hardware and Manufacturing Co. in St. Louis also produced straps after 1840.

https://en.wikipedia.org/wiki/Razor_strop

http://toolemera.com/Manufacturers%20&%20Merchants/Mfg.%20efghi/mfg.-charles_eme.html

www.taylors1000.com/manufacturers/manufacturers_all.htm#B

https://books.google.com/books?id=8foPAAAAYAAJ&pg=PA83&lpg=PA83&dq=Emerson%27s+Elastic+Razor+Strap&source=bl&ots=Gw-xs54KE-&sig=V4KZqBQCcjUCA4x3VQLD89ICESw&hl=en&sa=X&ved=0ahUKEwjS2YyJ-uLPAhVHxFQKHY1jCdQQ6AEIbDAF#v=onepage&q&f=false

Lamp Wicks: A wick acts as a 'pipeline' (capillary action) to draw fuel to a flame. The Egyptian 'rushlight' was a reed soaked in animal fat that moved up the reed to the flame. The Romans used woven fibers to create the first real wicks. Modern wicks were/are created in various thicknesses as determined by the lamp use. Wicks were made with twisted threads of spun cotton, flax or hemp. Because they did not burn well, snuffers were required. They were made by any number of American candle companies after 1820.

http://candleandsoap.about.com/od/basicinstructions/a/History-And-Types-Of-Candle-Wicks.htm

www.oldandinteresting.com/tallow-candles-snuffers.aspx

Lapis (***Lapis Lazuli***) This product was either the bright blue metaphoric rock used in decoration, jewelry, or the pigment (ultramarine) made from crushed lapis. The original source of this material was Central Asia (Afghanistan). After the 700s, it arrived in Venice via Arab trade. The pigment came to be named 'Ultra-Marine' ('pigment from overseas'). In the 1830s British Army Lieutenant John Wood working for the British East India Company, located the Afghan mine in the Hindu-Kush Mountains. Prior to 184, when pigments could be put into tin tubes for painting and other uses, lapis was transported in powder form. Lapis going to Santa Fe would have been imported from the Darreh-Zu mine via England or may have been brought in with the Chinas Trade.

www.visual-arts-cork.com/artist-paints/colour-palette-nineteenth-century.htm

www.palagems.com/lapis-lazuli-bancroft/

www.bonhams.com/auctions/19305/lot/36/

Letter Sealers:(Wax, Wafer) Although envelopes come into use in the 1840s, they were not widely used until the Civil War Era. Prior to that time, many letters were written on a double wide piece of paper (11"X 17"). It was folded according to specified directions, addressed and, along with a return address, sealed with wax (wick or wickless) and or a wafer seal (paper stamp) that could be purchased in sheets.

Early black sealing wax came in stick form and was made from lamp black mixed with lacquer or rosin. Red wax (use of vermillion) was called Indian or Dutch. A mixture of shellac and turpentine created a medium in which mica could be added for a golden like color. Smells could be added to the wax. Wafer seals replaced wax in England after 1839 when F. R. Lewis of Cork invented the item.

A major producer of stationery materials was David Felt who in 1825 created Stationer's Hall (business) in New York City. In the 1840s, he had stores in Brooklyn, Manhattan (245 Pearl St.), and New Orleans where the company sold everything related to writing. He sold his own products manufactured in New Jersey as well as products from England and France.

https://parkslibrarypreservation.wordpress.com/2011/02/14/how-to-post-a-letter-19th-century-style/

www.ephemerasociety.org/3/grotenPDFs/ASDA3-09.pdf

www.victorianpassage.com/2009/07/unfolding_the_mysteries_of_sea.php

http://mountainsidelibrary.org/site/1858moun/DavidFelt.pdf https://books.google.com/books?id=ZxgXAAAAYAAJ&pg=PA527&lpg=PA527&dq=david+felt+and+co.+stationers&source=bl&ots=CyPlaSVcyC&sig=dXeYT3d5kupNqiTfNlaOCNsZ1cA&hl=en&sa=X&ved=0ahUKEwjf6qbJuYjQAhXGwFQKHXoSBzkQ6AEIPDAJ#v=onepage&q=david%20felt%20and%20co.%20stationers&f=false (The New York Annual Register 1840)

Liquid Measuring Devices: Because of the general nature of this item and without maker's marks, they could have come from numerous house ware producers in Pittsburgh, Cincinnati or St. Louis.

Locks (Chest, Door) (See Also Barrel Locks Above): New Britain, CT. established itself as a center for American hardware manufacturing in the 1800s. It later became known as 'Hardware City'. The Russell and Irwin Manufacturing Co. established a hardware company (Stanley, Russell and Co.) in 1839 to produce locks and builder's hardware. The name was changed back to Russell and Irwin Manufacturing Co. in 1851.

Frederick Stanley established a small shop to produce bolts, hinges, and hardware to locals. He eventually created a great American hardware company, but it is not certain that his products made their way to Santa Fe. In 1844, Philip Corbin entered the hardware trade and by 1850 was producing locks and door knobs. The J.P. Schroder company of Cincinnati was manufacturing locks and keys in the 1830s.

www.bramah.co.uk/default.asp?lnc=about_history

www.urbanremainschicago.com/news-and-events/2015/11/23/russell-erwin-manufacturing-company-real-and-compression-bronze-builders-hardware-catalog-1870/

http://connecticuthistory.org/the-corbin-cabinet-lock-company-and-patent-law-a-lesson-in-novelty-from-a-ct-perspective/

www.castironcollector.com/russwin.php

http://connecticuthistory.org/stanley-works-for-new-britain/

www.cincinnatimagazine.com/citywiseblog/skeletons-in-the-closet/

Albert Nelson Marquis, *The Industries of Cincinnati: The Advantages, Resources, Facilities, and Commercial Relations of Cincinnati as a Center of Trade and Manufacture* (An N. Marquis & Co., 1883) https://babel.hathitrust.org/cgi/pt?id=wu.89073035123;view=1up;seq=128 (Colorado State University Library).

Long Champagne Glasses: (See Glassware)

Magnifying Glasses: This product came in many shapes, designs, strengths, sizes and materials and was in existence before the 16th century. They were made by instrument manufacturers and later optical manufacturers. Apart from what we think of as a magnifying glass, there was a lens called a 'quizzing glass' used in the 18th and 19th centuries. It was a cross between reading glasses and a magnifying glass. They too came in a variety of descriptions and could be hung around the neck or placed in a case. Their use by women can be recognized in English novels and modern period movies. Their popularity decreased after 1850- most likely as a result of the development of eye glasses. It is possible that such a product went to Santa Fe before 1830, but most likely magnifying glasses came from Boston, Philadelphia, or St. Louis. After 1839, German master craftsmen like Ryhiner and Blattner **(See Iron Compasses Above)** made precision instruments including magnifying glasses.

> www.surveyhistory.org/st__louis_instrument_makers1.htm
>
> www.collegeoptometrists.org/en/college/museyeum/online_exhibitions/spectacles/quizzers.cfmhttp://historicalhussies.blogspot.com/2010/08/regency-glasses-and-eyeware.html
>
> www.janeausten.co.uk/tag/quizzing-glasses/

Matches: Although the first match may have been created in China in the 6th Century CE, the first attempts at friction-like matches were expensive experiments in 1600's England. In 1817, a French chemist created a product called the 'Ethereal Match' - a glass contained piece of paper treated with a phosphorous compound that ignited when exposed to air.

An English apothecary created (by accident) the first striking match ('Lucifer') in 1826 but it proved to be too incendiary and dangerous. The next attempt to improve the process came in 1830 when a French chemist created a phosphorus match that was mass produced but lead to poisoning if inhaled too much. By 1844, the safety match was created in Sweden.

American Alonzo Dwight Phillips (Springfield, MA.) was granted a patent in 1836 but the product was very similar to the French product and one created by American John Hatfield in 1835. In 1842, Ruben Partridge created a machine process that replaced the hand whittled technique for creating 'sticks'.

Ezekiel Byam of Chelmsford, MA., bought Phillips rights and produced matches there and later in Boston. Matches destined for Santa Fe were probably from Byam's company and possibly the English company of Bryant and May who imported matches from Sweden and then re-exported them.

http://museumofeverydaylife.org/exhibitions-collections/current-exhibitions/history-of-the-match

http://pubs.acs.org/doi/abs/10.1021/ed018p277?journalCode=jceda8

Chauncey M. Depew (ed), *One hundred Years of American Commerce: A History of American Commerce by One Hundred Americans*, D. O. Hays, New York, 1895. Colorado State University Library via https://babel.hathitrust.org/cgi/pt?id=uc1.31175035226698;view=1up;seq=864;size=125

https://books.google.com/books?id=NdAUAAAAYAAJ&pg=PA1166&lpg=PA1166&dq=ezekiel+byam+match+manufacturer&source=bl&ots=HTlQtKTpMj&sig=9jHh1uR1lU8BXZJjxBcE9Zt0aFA&hl=en&sa=X&ved=0ahUKEwiItb6ov4XQAhWo0FQKHSM1DBkQ6AEIGzAA#v=onepage&q&f=false (New England Families, Genealogy and Memorial, Vol 3)

https://en.wikipedia.org/wiki/Bryant_and_May

Measuring Sets: Because of the general nature of this item and without maker's marks, they could have come from numerous house wares producers in Pittsburgh, Cincinnati or St. Louis.

Metal Door Plates: **(See Locks Above)** This decorative but functional product was attached to a door for the purpose of holding a door knob and lock. Another type of door plate was used for the identification of the address and or resident. Early plates were hand forged. Later they were stamped.

Metal Trunk Plates: This item, like the above, was both decorative and utilitarian.

Metal Rings: **(See Hardware Above)**

Mirrors (Gold-plated Paper, Cardboard): This product is also called a 'looking glass'. The gold-plated paper mirror was a *papier machié* mirror gilded with gold leaf. The mirror was hand made from pulp or strips and then gilded. Later in the 1800s, steam was used to shape the frame. Birmingham, Wolverhampton, London, and Oxford were the *papier machié* and products centers. The Litchfield Manufacturing Company in Connecticut began producing *papier machié* in 1850. A. Joseph Nurre manufactured moldings, frames and mirrors in Cincinnati in the 1850s.

http://museums.fivecolleges.edu/detail.php?museum=&t=objects&type=exact&f= &s=evic&record=338

www.si.edu/mci/downloads/relact/papier_mache.pdf

Gerald W. R Ward (ed)., *The Grove Encyclopedia of Materials and Techniques in Art* (Oxford University Press, 2008)

Albert Nelson Marquis, *The Industries of Cincinnati: The Advantages, Resources, Facilities, and Commercial of Cincinnati as a Center of Trade and Manufacture* (An N. Marquis & Co., 1883) https://babel.hathitrust.org/cgi/pt?id=wu.89073035123;view=1up;seq=128 (Colorado State University Library)

Mud Cleaning Brushes: This item is difficult to address because it could be a type of brush used for household use (shoes or boots) or for grooming horses and maybe mules and donkeys. Jacob Bromwell established the Bromwell Brush and Wire Co. in Cincinnati in 1819. Products included shoe and scrub brushes.

James A. Bradley became an apprentice brush maker to the Bernalds and Weeks company in New York City in 1830. In 1857, he established the Bradley and Smith Brush Company in 187, and created Asbury Park, a resort town in New Jersey.

Three brush manufacturers were located in Pittsburgh in 1843 (John Kennedy), 1851 (D. Stewart), and 1853 (Loughridge and Maxwell). The above Bromwell Brush and Wire Co. became Bromwell and Sons in 1830, specializing in all types of brushes and wire products. Their products were sold in the South and the West.

www.equusite.com/articles/basics/basicsGrooming.shtml

www.jacobbromwell.com/company-history

https://en.wikipedia.org/wiki/James_A._Bradley

A. N. Marquis (ed), *The Industries of Cincinnati: The Advantages, Resources, Facilities and Commercial Relations of Cincinnati as the Center of Trade and Manufacture, a Brief Review of Past and Present Conditions and a Delineation of Representative Industry and Commercial Establishment of the City* (Cincinnati : A. N. Marquis and Company, 1883) https://babel.hathitrust.org/cgi/pt?id=wu.89073035123;view=1up;seq=11 (Colorado State University)

Mugs of Ornate China (*picheles de china ornada*), (*picheles de loza francesa*), (*pichellitos de nina*): These items are difficult to translate. One source describes a *pichel* as tankard-like drinking mug. Another describes it as a jar but with no lid. Given the description as ornate china, and the fact that jars were identified above, it is most likely tankard-like mugs- adult and children sizes.

Without makers marks it is too difficult to determine whether these items were from England, France, China, or the United States.

Napkins: (See Linen Products/ Fabrics)

Needles: (Sewing Needles, Stocking Needles): Redditch, England (south-east of Birmingham) became a world-famous needle making center after 1700. Established about 1730, Redditch quickly rose to prominence and produced most of the world's needles in the 1800s. In 1824, about five million needles were made, and by the 1870s, more than 3.5 billion. American needle manufacturing did not begin until after 1852.

> http://freepages.genealogy.rootsweb.ancestry.com/~billburgoyne/needle_making. htm
>
> www.historytoday.com/richard-cavendish/forge-mill-needle-museum
>
> www.forgemill.org.uk/index.htm
>
> Robert Marion La Follette, *The Making of America* https://books.google.com
>
> (http://www.redditchhistory.com/needles.html)
>
> (http://www.finecellwork.co.uk/news_and_events/blog/483_a_brief_history_of_the_sewing_needle)

Ostrich Feathers: Prior to 1860, ostriches ran wild and were hunted by natives and whites in southern and east Africa. As early as 1821, Jews in the Cape of Good Hope exported 2712 pounds of feathers. The Mediterranean trade of ostrich was in the hands of Jewish traders of Essaouira and Tripoli.

By 1858, only 2,017 were exported from South Africa, but at twice the 1821 value. In the 1860s, ostrich farming (domestication) was established in South Africa (Oudtshoorn). The feathers were sent to Europe and in England processed within a radius of one mile of London into the East End. The feathers that made their way to Santa Fe were most likely sent after 1860 when the fashion industry demanded them until the outbreak of World War One.

> Sarah Abrevaya Stein, "Falling into Feathers: Jews and the Trans-Atlantic Ostrich Feather Trade", *The Journal of Modern History,* Vol. 79*, N*o. 4 *(*2007) The University of Chicago Press www.academia.edu/25831738)
>
> www.seligman.org.il/oudtshoorn_history.html

http://ias.umn.edu/wp-content/upLoads/2013/03/2013.4Med_Southern_Shores- Boum.pdf

www.cityoflondon.gov.uk/things-to-do/london-metropolitan-archives/the-collections/Pages/ostrich-feather-trade.aspx

Padlocks: **(See Locks)**

Paper (Accounting, Brown, Printed Design, Tracing): America's first paper mill was established in Philadelphia in 1690. A major mill was established in Berkshire County, MA., in 1801. By 1810 there already over 180 paper mills in the United States. Mills were located near urban areas where rags were available. After 1820, machines gradually replaced handmade paper. New York became the nation's pre-eminent commercial center- consuming all types of paper for ledgers and journals.

New York merchants consigned paper to other commercial centers like Philadelphia around 1832. At that time 75% of all the cotton and linen rag material was imported from England and Ireland (linen mills). In 1831, steam was used at the Chambersburg, PA mill. By 1840, the largest number of paper producers were in Pa (87), Massachusetts (82), and New York (77). Prior to 1820, England exported to the United State. Thereafter, America imported more from France and established its own paper industry.

Printed design (*papier peint/* wall paper) was already available in 1700 Boston and used to line interiors and exteriors of boxes (band boxes) and the interior of book covers. In homes, it replaced expensive tapestries after 1770. Manchester, England was producing painted paper and advertising in the colonies as early as 1737. As of 1790, Alexander Hamilton noted the existence and importance of a developing industry that needed to be supported. During the first half of the 1800s, the French excelled at *papier peint*. The French Zuber factory in Alsace developed a multi-color printing technique that spread throughout Europe and America in the 1820s. Importers from New England and New Orleans purchased Zuber wall hanging paper.

A government report in 1833, noted seven paper hanger manufacturers in Massachusetts including W & W&C Laflin in Lee. John Perkins produced paper in New Bedford as well as five firms in Boston. By 1844, imported paper painting machines at the Howells and Company in Philadelphia, PA. threatened the skilled paper stainers. Howell became America's largest manufacturer by 1870. After 1840, use of painted paper was increasingly enjoyed by the Middle Class as a result of the cost of machine produced paper.

Tracing paper (transparent paper) was used by artists, engineers, architects, and builders. Prior to the 1860s, it was handmade. In the 1840s because it was easily obtained, used and discarded was often called 'trash'. After 1860, it was produced by machine using rag or wood pulp. Its transparency was created by adding oils and resins whereby, after drying, light was not reflected but passed through to the object to be traced below.

www.ipst.gatech.edu/amp/collection/museum_pm_usa.htm

J. Leander Bishop , *A History of American Manufacturers from 1608-1860* Vol. 1, Third Edition (New York: Augustus M. Kelly Publishers,1966)

Judith A. McGraw, *Most Wonderful Machine: Mechanization and Social Change in Berkshire Paper Making 1801-1885* (Princeton, New Jersey Princeton University Press, 1987), (Colorado State University)

http://berkshiremuseum.org/blog/places-of-invention-papermaking-in-the-berkshires/

http://docs.lib.purdue.edu/cgi/viewcontent.cgi?article=1124&context=charlestonttps://books.google.com/books?id=W8MAAAcAAJ&pg=PA443&lpg=PA443&dq=american+writing+paper+production+1830&source=bl&ots=iqgcXmKb2R&sig=Y9_W1yetfC2qNKt0jOMrHopmA4s&hl=en&sa=X&ved=0ahUKEwi0y5qAtczQAhVk6IMKHaKsBbYQ6AEIQDAH#v=onepage&q=american%20writing%20paper%20production%201830&f=false

John Bidwell, *American Paper Mills 1690-1832: A Dictionary of the Paper Trade with Notes on Products, Watermarks, Distribution Methods, and Manufacturing* **(**Hanover, New Hampshire: Dartmouth College, 2013)

www.adelphipaperhangings.com/overview.html

Catherine Lynn , *Wall Paper in America from the Seventeenth Century to World War I* (New York: W.W. Norton and Company, 1980)

www.nps.gov/parkhistory/online_books/tpsd/wallpaper/sec2.htm

www.raabcollection.com/blog/authentication-check-paper-pen-and-ink

http://cool.conservation-us.org/coolaic/sg/bpg/annual/v16/bp16-09.html

www.nbm.org/exhibitions-collections/exhibitions/tools-of-the-imagination.html?referrer=https://www.google.com/

Pencils: Writing instruments resembling pencils have a history back to the Romans and earlier. Nicolas- Jaques Conté was granted a patent in 1795 for a process of mixing clay with graphite and varying degrees of clay to produce 'leads' of graduated blackness and hardness. This process was used in France, Germany and England where English 'Cumberland graphite' produced the highest quality pencils. Elias and Zive Wolff produced pencils and colored pencils (Creta Laevis) in East London in the 1840s. Banks, Forster and Company was a highly reputed manufacturer at the same time.

In America, the William Monroe Company of Boston produced wood encased pencils in 1812 and after 1820 several pencil companies existed near Boston. In 1821, graphite was discovered in New Hampshire by Charles Dunbar who created a pencil factory with his brother-in-law John Thoreau (father of Henry David Thoreau who once worked there). American pencils were inferior to their English competitors due to the smeary, greasy nature of American graphite.

American distributors in Boston and Philadelphia advertised French and English lead pencils. In 1866, Joseph Dixon of Jersey City, NJ. designed a wood shaving machine that could produce 1342 pencils a minute. The wood was a splinter resistant Eastern Red Cedar. Not until after the Civil War did American manufacturers like Faber, The Eagle Pencil Co., Joseph Dixon, and the American Lead Pencil Co. expand production of higher quality pencils.

> http://museumofeverydaylife.org/exhibitions-collections/current-exhibitions/visual-history-of-the-pencil
>
> www.thepalimpsest.co.uk/2011/03/elusive-elias-wolff.html
>
> www.uh.edu/engines/epi339.htm
>
> www.officemuseum.com/pencil_history.htm

Pens: Prior to 1820, the quill pen was the norm. Its creation required skill to produce a clean and lasting tip. After that date, one could purchase ready-made versions. The first American patent for a fountain pen was given to Nelson Bartlett in 1843 but the mechanism did not provide consistent quality thus resulting in frequent complaints. Steel pen patents were issued to Englishmen in 1830 and 1831. The English pens were primarily manufactured in Birmingham by 4,600 workers at thirteen firms using 25 tons of steel to produce 250,000 gross pens per week. **(See Steel Pen Nibs Below)**

Several manufacturers were located in France and Germany and six in the US in Connecticut, New York, and Pennsylvania. American gold pen manufacturers were more successful at competing with the English. A watch maker in Detroit first started hand making gold pens in 1835, but not until 1840 was he able to produce a quality pen that functioned better than a quill pen.

www.officemuseum.com/Pens.htm

Johnson's Universal Cyclopeadia, Vol 8. pgs 509, 510.
ttps://books.google.com/books?id=lftMAQAAMAAJ&pg=PA510&lpg=PA510&dq=John+Johnson+british+quill+pen+maker&source=bl&ots=r8yN9jHb3E&sig=YghRqtJ_ha2Qj1ZwAiMeuBDhKbY&hl=en&sa=X&ved=0ahUKEwipmPa1mM_QAhUM
7YMKHV03CLIQ6AEIOjAG#v=onepage&q=John%20Johnson%20british%20quill%20pen%20maker&f=false

Pill Boxes: The first American patent was awarded in 1809 to James Goddard but when it expired, numerous manufacturers produced boxes for pharmacists. Pill boxes came in many shapes and sizes. They were made from materials including wood, silver, gold, gold gilt, and silver plate. Because pills were rather large, these boxes were unlikely carried by the person. A pill box maker is recorded in Cincinnati in the 1840s, but the many sources, both American and European, make it impossible to determine from where the product came before heading to Santa Fe.

https://books.google.com/books?id=DftZWlVnzH8C&pg=PA258&lpg=PA258&dq=james+goddard+box+maker&source=bl&ots=T6E23XoiXp&sig=Z7iFZjn2DpsOyUiIPbCAkyauILg&hl=en&sa=X&ved=0ahUKEwiVjfP3g9bQAhVjylQKHUfnDb8Q6AEIGjAA#v=onepage&q=james%20goddard%20box%20
maker&f=false

www.rootsweb.ancestry.com/~ohhamilt/dir1840cinti1.html

Pins: Pins were not known in England until the early 1500s. Women used ribbons or skewers made of wood, silver, gold or brass. Early pins were dangerous and initially regulated by Parliament. By 1800, pins came primarily from England until the 1830s, when in 1835, Howe Manufacturing Company began producing 70,000 pins a day in New York and later Connecticut. It was one of the largest producers in the US. Pins came in various sizes and had special names and purposes.

www.uniclectica.com/misc/pins.html

www.madehow.com/Volume-7/Straight-Pin.html),

https://regencyredingote.wordpress.com/2011/09/16/regency-pins/

http://connecticuthistory.org/john-howe-makes-a-better-pin/

Plates (Large, China, Crystal, Glass, Tin): This subject is so expansive that without specific maker's marks it is impossible to specifically determine where they were made in Europe, Asia, or America.

Pots (Cooking, Coffee, Teapots): Because of the general nature of this item and without maker's marks, they could have come from numerous house ware producers in England and later Pittsburgh, Cincinnati or St. Louis.

Ribbon Tape Measures: This item may seem pedestrian, but it was a great improvement over the use of a human finger or palm. The need to measure was important to all aspects of commerce beginning with ancient civilizations. However, a standardized measure was not created until 1799 in France when the meter was established. Then in 1840, France declared that only the decimal system was legal. It became the standard throughout Europe except in Britain where the yard prevailed. Measurements were increasing important in tailoring.

The tape measure came into use after 1800 when more precise units of measurement were required for tailoring and making patterns. By the 1830s, the tape was an important part of a sewing kit and tapes were contained in a variety of decorative cases made of bone, ivory, shell, and wood. The town of Tunbridge, County Kent, England made beautiful mosaic wooden tapes.

> S. P. Ashdown (ed.), *Sizing in Clothing: Developing Effective Sizing Patterns for Ready to Wear Clothing* (Cambridge, England: Woodhead Publishing, 2007). (Colorado State University)
>
> www.bleasdalesltd.co.uk/app/download/5804987358/Tape+Measures.pdf
>
> http://www.tunbridgeware.org/

Rulers: This item could be listed under household or tools. Measuring around the house and or measuring for construction purposes required long rulers. To make the ruler more mobile, manufacturers created folded rules or shorter ones for house use.

Michael Rabone began making rulers in Birmingham, England in the 1780s. In the 1830s, the James Chesterton and Co. Ltd, specialized in rulers. Hermon Chapin established a company making wooden planes near Hartford, CT. In 1826, he added what is known as the 'Blindman' or 'Nearsite' boxwood ruler. The large numerical markings made it easier to see.

After 1838, the E.A Stearns Company of Brattleboro, VT., and Springfield, MA. produced rulers. In 1854, one of Chapin's workers (Delos H. Stephens) started manufacturing rulers and furnished some to Chapin. The Stanley Company was established by Frederick in 1843 in New Britain, CT., and later Henry made rulers in at the Stanley Rule and Level Co. in 1857. A J & G H Walker manufacturer in New York is also cited as making rulers after 1849. Rulers could also mean wooden school rulers.

www.collectorsweekly.com/tools-and-hardware/rules-rulers

http://discovery.nationalarchives.gov.uk/details/rd/b1c59203-5072-4b24-9a19- ba32b08d4a84#-1

https://chs.org/finding_aides/finding_aids/chapin.html

http://thepatriotwoodworker.com/topic/16026-chapin-stephens-no7-nearsite-four-fold-ruler/

www.libertytoolco.com/toolsrulers.html

www.stanleytools.com/about/milestones

www.stanleyblackanddecker.com/about/our-legacy

www.jimbodetools.com/J-G-H-WALKER-MAKERS-NEW-YORK-Boxwood-and-Brass-Ship-s-Bevel-Rule-Circa-1849-73-p27767.html

Salt Shakers: Without specific maker's marks this subject is too broad for a search.

Saucers (See Cups and Saucers Above)

Scales: Without maker's marks and the fact that here are many types of scales for numerous purposes, researching the subject was difficult. The earliest was the common 'equal arm' balance scale with weights on one side (pan) and the item to be weighed on the other side (pan). It could be used for weighing money, precious stones, food, and chemicals. The quality of the scale was dependent on the specific use.

The coiled spring was patented in 1763, and thereafter the spring scale (1770) was developed by Richard Salter during the Industrial Revolution. It became a widely used household item and used by the US Postal Service (candle stick spring scale) for individually weighing envelops and packages. Other equal arm scales were made for kitchens. Although designed for smaller weights, they were more artistically created.

Apothecary equal arm scales were more delicate in design. Steelyard balances had unequal beam arms and an immovable fulcrum. These scales were used for weighing heavy objects and loads. There were also scales specifically designed for weighing eggs, grain, money, textiles, and paper.

Manufacturers of scales were located in England and America. The Philip Harris Company of England began making scientific scales after 1817. Located in

Birmingham, England, Robert Walker Winfield made candle stick spring scales for the post office after 1829. Numerous scale manufacturers are listed in Pennsylvania (Philadelphia) after 1860.

Among the relics found in the *Arabia* steamboat excavation was a Fairbanks scale. Thaddeus and Erastus Fairbanks of St. Johnsbury, VT., after years of experimentation, received a patent for a new scale. By 1860 The E & T Fairbanks Company scales were the best known in the US and the world. They continue operation to this day. Another excavated scale was from the John Chatillion & Sons Company formed in 1835 in New York.

See http://www.isasc.org/Tutorial/Scale-Types.html (international Society of Antique Scale Collectors for an excellent source of types of scales and manufacturers.

www.arlynscales.com/saw-technology/evolution-scales-balances-saw-technology/

http://weighconnect.com/weighing-scales-blog-post-details.php?post=A_brief_look_into_the_evolution_of_weighing_technology

www.isasc.org/Equilibrium/Back_Issues/2006-1.pdf

www.gilai.com/article_21/Hanging-in-the-Balance---Antique-Scales

www.isasc.org/Equilibrium/Back_Issues/2006-1.pdf

www.fairbanks.com/company/history.cfm

www.chatillon-scales.com/about-chatillon/our-company.aspx

www.philipharris.co.uk/contentpage/about-us

Scissors: The word comes from the Latin term *cisoria*. It appears in French between 842 and 1300 as *cisories*. Around 1400, there is an English reference to *sisours*. Prior to 1850, the best cutlery was from Sheffield, England. Before 1840, scissors were hand made in a 150-step process involving a forger, filer, fitter, setter, grinder and various finishers. By mid century (1850), thousands of pair of scissors were being made in Sheffield by major companies like Joseph Rogers and George Wostenholm. French scissors were produced in Thiers, Nogent, and Paris. Solingen, Germany was the center for German scissor manufacturing.

Rochus Heinrisch come to America from Austria and created a process of facing malleable iron with steel to create a shears and cutlery company in 1847. One of his workers, Jacob Wiss later established the Jacob Wiss Company of Newark, NJ. It became a manufacturer of durable shears, scissors and razors in 1853. Scissors were a necessity, but shears and smaller scissors were used in embroidery and tailoring.

http://elegantarts.com/Newsletter1.pdf

http://jwissandsons.com/shears-scissors.pdf

www.eggintongroup.co.uk/history/the-history-of-joseph-rodgers.html

Sewing Boxes: These boxes were prized possessions in families and held the materials used in the various sewing and needlework arts. Its style was similar to a tea caddy until the mid 1800s when it became more rectangular. Numerous English companies both imported and made a variety of plain and decorative boxes.

From the late 1700s, Red lacquer China trade boxes were very popular imports from China. After 1750, imported needlework accessories could be obtained in Philadelphia and New York goldsmith and jewelry shops. Tonbridge and Tunbridge Wells in Kent, England became famous for their decorative boxes. Elaborate boxes held velvet pin cushions, ivory thread winders, needle cases, punches, embroidery and crochet tools, and decorative thimbles. Some boxes were constructed from fine woods like mahogany.

An innovation in shape and function became popular after 1825 as spool holders were built into the boxes to complement the developing thread market. After 1850, boxes were made of *paper mache* or cardboard and covered with printed paper or painted. Boxes made of plain wood and wicker material could also be obtained at less expensive prices.

www.hygra.com/sewing.htm

Nina Fletcher Little, *Neat and Tidy: Boxes and Their Contents Used in Early American Households* (Hanover, NH: Society for the preservation of New England Antiquities, University Press of new England, 2001)

www.tunbridgeware.org/p/articles-%26-info/tunbridge-ware

Silverware: Prior to 1840, quality silverware was produced and sold by English craftsmen. With a few exceptions, prior to 1840, American silverware (*cubiertos*) was also produced by craftsmen. These exceptions included producers in Philadelphia (Baldwin Gardiner), Boston (Thomas Fletcher), and New York (William Gale) who expanded production by using labor saving devices and advertising to reach a wider market.

In the mid 1820s, Gale (New York) invented a roller die that more efficiently shaped utensils. In 1826, Isaac Babbit and William Grossman of Tauton, MA., built a facility that employed steam power to flatten Babbit's new Britannia Metal into smooth sheets. This metal was comprised of tin, antimony, and copper to produce a more lustrous and white product than pewter. Designers Henry Reed and Charles Barton affiliated with Babbitt and Grossman.

Gorham Manufacturing Co. began hand making forged table silver in 1832. Two men could produce 24 pieces a day. In 1833, Babbit improved on a method whereby the silver sheet could be bent over a wooden form thus making 'hollow-ware'. Reed and Barton bought the company in 1834. After a visit to England in 1837, J.O. Mead of Philadelphia returned with a Smee battery and began experimenting with plating. Reed and Barton incorporated electroplating in the company in 1840 and went on to become the famous company it is today. After 1840, numerous types of silverware (flatware) came into existence.

> Charles L Venable. *Silver in America 1840-1940: A Century of Splendor (*New York: Dallas Museum of Art, Harry N. Abras, Inc. Publishers, 1995)
>
> www.encyclopedia.com/literature-and-arts/fashion-design-and-crafts/arts-and-crafts/silverware
>
> https://beverlybremersilver.wordpress.com/2009/11/17/history-of-reed-and-barton/

Small Brooms: Any broom going to Santa Fe during this time, was made in the United States. In the late 1700s, sorghum (later called broomcorn) was tied together to make a rudimentary round broom. The Shaker community of Watervliet, New York developed brooms and are credited for making the first flat broom at the turn of the 19th century. Broomcorn became a valuable crop and the people who picked it were called 'Broomcorn Johnnies'. In 1810, a foot treadle broom making machine was invented. It held the wooden handle in place as the craftsman bound the broomcorn. By 1830, there were 60,000 broom shops in the United States and by 1850, a million brooms were made in Massachusetts. By that time, brooms were exported around the world.

> www.madehow.com/Volume-6/Broom.html
>
> www.broomcornjohnnys.com/broomlore.php
>
> http://broomshop.com/history/
>
> www.slate.com/articles/life/design/2012/06/broom_history_how_it_became_flat_.html

Small Mirrors **(Looking Glass)(See Also Glassware Above):** *Mirour* (French) meant a polished metal plate in medieval times. In the 1500s Venetian glassmakers made clear glass that could be backed with foil. In the second half of 1700s mirrors were primarily imported into the colonies.

Mirror manufacturing was conducted by professions not identified as looking glass companies but rather cabinet and instrument makers and gilders. After the Revolution, cast glass was primarily imported from France. Nine glass operations existed in the United State as of 1800. In 1837 there were 108. As early as 1808, Fondly and Winne in Albany, New York advertised mirrors. John Doggett of Roxbury, MA. was selling looking glass among other crafts in 1822. The company of Charles, Joseph, and John del Vecchio of New York sold looking glasses into the 1840s.

Other dealers included Elias Pratt of New York, Peter Grinell and Son of Providence, RI., and Thomas A Hillier and of Pittsburgh. Production of glass west of the Mississippi did not develop until after the 1850s. Very little window glass was available in Santa Fe until after American occupation in 1846.

Helen Comstock , *The Looking Glass in America 1700-1825* (New York: The Viking Press, 1968)

http://content.winterthur.org:2011/cdm/landingpage/collection/Doggett

http://narafriends-pittsfield.org/ital_case.htm

Woodhouse, Samuel W. "John Elliott: As a Cabinet Maker." *Bulletin of the Pennsylvania Museum*, vol. 20, no. 91, 1925, pp. 73–72.

https://archive.org/stream/historyofpittsbu03flem/historyofpittsbu03flem_djvu.txt

An Archaeologist's Guide to Nineteenth Century American Glass https://sha.org/bottle/pdffiles/Lorrain1968.pdf

Lane Coulter and Maurice Dixon Jr., *New Mexican Tinwork 1840-1940* (Albuquerque, NM: University of New Mexico Press, 1990)

www.furniturelibrary.com/mirror-glass-darkly/

Snuffers (**See Candle Snuffers Above**)

Soap: (See Also Fine Soaps under Personal Items) The history of soap goes back thousands of years, but the American use of soap was a mid 19th century development. The United States became a soap manufacturing leader in the 1800s. As early as 1752, pharmacist Dr. William Hunter from Scotland opened a shop in Newport, RI. He initially specialized in fragrances and perfumes, but later associated with John Rose Caswell and William Massy to create Caswell-Massy in the 1870s. English emigrant William Colgate (Colgate University) opened a store in New York in 1806 and first advertised in New York City in 1817. By 1840, he produced a bar of soap of uniform size and weight.

Cincinnati became America's leading soap manufacturing center after 1840. Michael Werk established the M. Werk Soap and Candle Company in Cincinnati in 1832. In April of 1837, William Proctor (England) and James Gamble (Ireland) started a soap and candle enterprise in Cincinnati. A label with a moon and stars was their first marketing identification. Later it became the label for all their products.

Soap making changed during that time when soda ash (first imported from England) replaced lye made from wood ash in order to make a harder and less caustic product. Many producers created large slabs of soap which were then sold to grocers and cut according to the buyers need. Santa Fe Soap would have come from Cincinnati. **(See Also Candles and Nicholas Schaeffer Above)**

http://americanhistory.si.edu/collections/search/object/nmah_310734

www.caswellmassey.com/pages/our-story

www.hagley.org/research/research-news-events/news/all-news/published-collections-perfume-america

www.aselfsufficientlife.com/homemade-lye-from-wood-ash.html

www.colgatepalmolive.com/en/us/corp/about/history

https://blog.udemy.com/history-of-soap/

www.encyclopedia.com/history/dictionaries-thesauruses-pictures-and- press-releases/soap-and-detergent-industry

http://inquisitus.com/michael-werk/

www.pg.com/translations/history_pdf/english_history.pdf

www.pg.com/en_US/downloads/media/Fact_Sheets_CompanyHistory.pdf

Spoons (Common White Metal, Pewter, Tea): (**See Silverware Above, Tin Below**)

Steel Snuffers: **(See Candle Snuffers)**

Steel Writing Points **(Nibs): (Also See Pens Above)** Although metal pen tips were in existence for centuries, the steel nibs came into popular use in the 1830s. The earliest steel tips were made by machine and initially came from companies owned by William and John Mitchell, Joseph Gillot, and Josiah Mason who were all located in Birmingham, England.

Most pens in used in the United States came from Joseph Gillot. Gillot married a Mitchell sister, began making pens, and in the 1830s and in 1857 established Victoria Works. By 1849, there were twenty pen manufacturers in Birmingham. The first American manufacturer was Richard Esterbrook, a Cornish Quaker who emigrated from England. He established The Esterbrook Steel Pen MFG. Co. in Camden, NJ. in 1858.

www.ringpen.com/history.html

www.officemuseum.com/Pens.htm

www.gracesguide.co.uk/Joseph_Gillott_and_Sons

www.williammitchellcalligraphy.co.uk/about

www.gracesguide.co.uk/History_and_Directory_of_Birmingham,_1849 :_Steel_Pen_Manufacturers

https://esterbrookpen.com/

www.whiteapplemultimedia.com/history.html

Stemmed Crystal Glass (**See Also Glassware**):

Stills: There were two distinct types of stills (column and pot). Column stills were more efficient for distilling grains, but pot stills were most likely the type sent to Santa Fe before the Civil War. Distilling technology evolved over hundreds of years. The first commercially successful column still was built in 1828 by Robert Stein in England. Thereafter, the technology and processes were refined in England, Ireland, Scotland and France. Aeneas Coffey patented a still that allowed for continuous distillation.

The history of distilling in American is legend. Distilling followed the people west. By 1820, more than 25% of the population was west of the Appalachians and making and hauling distilled spirits. Over 2,000 barrels of Kentucky whisky (called bourbon after 1840) was shipped out to various destinations in 1820. Peoria, Illinois was once the whiskey capital of the world. Almiran S. Cole built the first distillery there in 1843. Many other industries were created to support the city's distilling enterprises.

http://whiskyscience.blogspot.com/2013/08/history-of-column-still.html

www.dcs.ed.ac.uk/home/jhb/whisky/history.html

www.discus.org/heritage/spirits/#9

www.peoriamagazines.com/ibi/2011/jan/made-peoria-birth-industry

Steel Tobacco Boxes:(**See Tobacco Boxes Below**)

Syringes (**Including Female Syringes from Personal Category):** The term syringe can mean numerous products that include a garden tool, general personal hygiene (ears, enemas), female hygiene and contraception, a needle, surgery, and a device for 'bloodletting'.

Most likely the syringes going to Santa Fe were of the hygienic, medical, and contraceptive type. In 1807 the Edinburgh Medical and Surgical Dictionary defined a syringe as an instrument to imbibe or suck in a fluid and later expel it. It was used for transmitting injections into cavities or canals. A reference to 'syringes' was found in *Index Medicus* (1820) and was specifically noted as female syringes.

By the 1840s, the female syringes were also called irrigators, injectors (for douching), syringes, and intra-uterine syringes. A syringe used for emptying the stomach of poison was designed by Englishman John Read in 1813 and soon improved on by the English surgeon W. Jakes in 1822. Thereafter, London instrument makers Rose and Sellers perfected the device and made it available in America.

The first appearance of what could be called a hypodermic is credited to Charles Gabriel Pravaz (France) and Alexander Wood (Scotland) in 1853. The manufacturing of medical instruments (normally identified as Surgical) appeared in America as early as the late 18th century. By 1840, Philadelphia, Boston, and New York were the centers for surgical instrument manufacturing. Because of its evolving medical community and educational institutions, Philadelphia was the center for this manufacturing.

Before 1840, instruments were primarily 'made to order' and the craftsmen were located within the area near the University of Pennsylvania and the Jefferson Medical College. Around 1820, the Philip Brown Co. of Philadelphia published its first catalogue. Syringes were manufactured in 1840s and thereafter by Martin Kuemerle, and John Calvary in Philadelphia. George W. Carpenter opened a Philadelphia drug company 1833 and offered instruments from both London and America.

Syringes began to replace the use of leeches for bloodletting around 1840 because the limited supply and cost of quality leeches. A syringe like device for this purpose was designed by French physician Heureloup and was later made by Jacob H. Gemrig in Philadelphia. Information about contraception became more available after 1830. The *Ladies Medical Guide* (1833) discussed the use of 'instruments' (including syringes) in reproductive control. Numerous other publications followed. A rapid decline in birthrate between the decades of the 1840s and 1850s is partially explained by the dissemination of contraception information and new procedures including 'abortifacients' (abortion induced drugs). Syringes played a role in both feminine hygiene and contraception. A George C. Goodwin & Company (pharmaceuticals) was established in Boston. He possibly sold douching syringes in the 40s and 50's but for sure sold them after 1870. Two instrument makers are noted in Pittsburgh after 1839. Syringes making their way to Santa Fe before 1860 probably came from east of the Appalachians.

http://www.exchangesupplies.org/article_history_of_injecting_and_development_of_the_syringe.php

Janet Farrell Brodie, *Contraception and Abortion in Nineteenth-Century America* (Ithaca, NY: Cornell University Press,1994)

http://www.evolve360.co.uk/Data/10/Docs/11/11Jackson.pdf

http://phisick.com/article/breathing-a-vein/artificial-leeches/

James V. Ricci, *The Development of Gynecological Surgery and Instruments* (Philadelphia: Blakiston, 1949) https://babel.hathitrust.org/cgi/pt?id=mdp.39015000794308;view=1up;seq=9 (Colorado State University Library)

www.sciencephoto.com/media/535956/view

Edmonson, James Ph.D., *American Surgical Instruments: An Illustrated History of Their Manufacturers and a Directory of Instrument Makers to 1900 (*San Francisco: Norman Publishing, 1997)

www.peachridgeglass.com/2014/05/indian-vegetable-and-sarsaparilla-bitters-by-george-c-goodwin/

James C. Mohr **,** *Abortion in America: The Origins and Evolution of National Policy, 1800-1900* (New York: Oxford University Press,1978)

Richard Reece, *Lady's Medical Guide: Being a Popular Treatise on the Causes, Prevention, and Mode of Treatment of the Diseases to which Females are Particularly Subject* (Philadelphia: Cary, Lea, and Blanchard, 1833) https://ia800204.us.archive.org/4/items/67120130R.nlm.nih.gov/67120130R pdf

Table Cloths (**See Linen Products/ Fabrics**):

Tar (Pitch) and **Turpentine:** These products are included in the production of what is known as naval stores. This industry was a long established and actively associated with sailing. The earliest sea captains described North Carolina's pines and the materials that could be 'sweated' out of the wood. Pitch (hard sticky amber rosin) was derived from the tree's gum (oleoresin).

By 1700, Elizabeth City, North Carolina was the center for naval store production. The colony became a major exporter to England who then re-exported to other parts of Europe. After the revolution, turpentine and rosin (distilled products) became important products used in lamp oil and soap manufacturing. This industry extended into the mid 1800s and created a major industry for the state. North and South Carolina accounted for 90%+ of US naval store production. Wilmington became the center for distilling and exportation. By 1860, North Carolina naval stores was the third most important industry behind cotton and tobacco. It took at about 3,000 Long Leaf pines to obtain 75 barrels of turpentine.

www.richmondfed.org/~/media/richmondfedorg/publications/research/region_focu s/2011/q4/pdf/economic_history.pdf

http://northcarolinahistory.org/encyclopedia/naval-stores/

http://daysgoneby.me/turpentine/

The Naval-Stores Industry in the Old South, 1790-1860 Author(s): Percival Perry Source: The Journal of Southern History, Vol. 34, No. 4 (Nov., 1968), pp. 509-526 Published by: Southern Historical Association Stable URL: http://www.jstor.org/stable/2204384

https://naldc.nal.usda.gov/naldc/download.xhtml?id=IND43895050&content=PDF

Tacks: This item was not developed until the 1870s. What is commonly called the 'push pin' was not invented until 1900.

http://tenrandomfacts.com/thumbtack/

http://inventors.about.com/od/pstartinventions/a/Push_Pin.htm

Thimbles: (Silver metal, Tailor use): Thimbles were used thousands of years ago. Metal thimbles came into existence in 1150. Their mass production began in 1695 in London. By the end of the 1800s, 80 million thimbles a year were made. Thimbles were made from many materials including silver, gold, brass, copper, pewter, porcelain, bone, ivory, mother of pearl, and tortoise shell.

Prior to 1800, American makers like Paul Revere did not mark their product. Ezra Prim and John Rushmore established Ketchem and McDougall on Long Island in New York in 1832. They became known as 'The Thimble House'. George W. Simon and Brother established their Philadelphia company in 1839, making gold, silver, and steel topped thimbles. Their mark was' S.B.C'.

Cincinnati had nine silversmiths in 1919, and by 1830 was considered the center of silver making west of the Appalachians. Silver thimbles from any one of a number of smiths like Edward and David Kinsey could have been sent to Santa Fe. During the Victorian Era, a silver thimble was a personal but appropriate gift to a woman.

Estelle Zalkin, *Zalkin's Handbook of Thimbles and Sewing Implements: A Complete Guide with Current Prices* (Radnor, PA Warman Publishing Co. Inc, 1988 (Avenir Museum of Design and Merchandising at Colorado State University)

www.antiquetrader.com/antiques/antiques-americana/ten-things-didnt-know-thimbles

www.archive.org/stream/philadelphiaitsm00freeiala/philadelphiaitsm00freeiala_djvu.txt

www.simonsbrothers.com/about.htm

www.antiquesandthearts.com/web-10-24-14-aa-lead-cincy-silver/

www.antiquequiltdating.com/The_History_of_the_Thimble.html

Thread (Bead, Cotton, Embroidery, Fine, Hemp, Lace, Linen, Silk): Each of the preceding types of thread was individually cited in the original list. To simplify, they are treated collectively along with specific references to type. Thread has been in existence for millennia. Although Henna Wilkinson (wife of Samuel Slater) of Rhode Island is credited with a patent for cotton sewing thread in 1793, the thread did not work well and so her story was superseded by the creation of super sewing thread in Paisley, Scotland during the early 19th century.

Due to the French blockade of England, silk thread from Asia became scarce and expensive. James and Patrick Clark designed a method of weaving together cotton strands in 1812. Initially the thread was hand wrapped into skeins and laid in boxes but eventually the Clark family created a spool from birch wood and a spooling machine in 1846. The spooled thread was marketed as Clark & Company, Anchor Mills, Paisley, Scotland.

John Dewhurst established his Belle Vue Mills in Skipton (north of Manchester) in 1828. Using the Leeds and Liverpool Canal, he shipped the Dewhurst Sylko brand thread out of Liverpool. After 1830, The J.& P. Coats Company at Ferguslie Mill, Paisley became a major producer and opened operations in America in the 1860s.

Prior to 1820, most American thread was imported. The first American cotton mill was established by Samuel Slater (the English emigrant with memorized factory plans) at Pawtucket, RI. in 1793. Thereafter, mills were established throughout the northeast and the first in the south by Michael Schenck near Lincolnton, North Carolina in 1813. He developed the 'Lily' brand sewing threads.

Sewing thread was different from textile thread which was used for weaving material. American mills did produce sewing thread but, much was still imported. Cotton thread marked 'New York Mills' (near Utica NY.) was excavated in 1988 from the *Arabia* Steamboat (1856).

The rise of the silk industry (sericulture) in England is voluminous. By the middle of the 1850s, there were many silk manufacturers in Spitalfields (East London) and Essex and Suffolk. America's Ben Franklin encouraged a Philadelphia 'filature' (silk producing site in 1770, but inexperience closed it in 1775. In 1760, the cultivation was introduced in Mansfield, Connecticut. The first water powered silk mill was built by Rodney and Horatio Hanks in 1810, but due to lack of knowledge closed twice.

Eighteen year old Englishman Edmund Golding from Macclesfield, England (south of Manchester) came to Mansfield with memorized plans. The Mansfield Silk Company came soon after but their attempt to weave it proved unsuccessful because silk did not hold up with the heavy cotton and wool machinery. In 1839, competitors began making thread using a new loom created by Nathan Rixford who later established his own mill.

As of 1843, there existed twenty-two American silk manufacturers in Connecticut, Massachusetts, Ohio, New York, Pennsylvania, Indiana, and New Jersey. The Nonotuck Silk Company succeeded the Northampton Steam Mill of Massachusetts in 1855. It became very successful using raw silk from China and Japan. Because American customers did not care for the quality of domestic silk thread, manufacturers employed the tactic of using European sounding names. In the

1870s, Nonotuck Silk Company adopted the name Corticelli (Italian reference to high quality silk) for its thread.

> Dr. Isabel B. Wingate, *Fairchild's Dictionary of Textiles (6th edition)* (New York: Fairchild Publications, 1979), (Avenir Museum of Design and Merchandising at Colorado State University)
>
> www.sewalot.com/sewing_machine_threads.htm
>
> http://yorkshire.u08.eu/skipton/
>
> www.coatsandclark200years.com/pdf/timeline.pdf
>
> http://homepages.rootsweb.ancestry.com/~jmbhome/dewhurst%20cotton.htm
>
> www.sil.si.edu/DigitalCollections/hst/cooper/pdf/SIL10-08999-0230.pdf
>
> https://supreme.justia.com/cases/federal/us/149/562/case.html
>
> Jacqueline Field, Majorie Senechal, Madelyn Shaw, *American Silk 1830-1930* (Lubbock, Texas: Texas Tech University Press, 2007)
>
> http://content.post-journal.com/?p=636776/The-History-Of--Cotton-Sewing-Thread.html
>
> https://sites.textiles.ncsu.edu/history/textile-people/michael-schenck/
>
> https://archive.org/stream/cu31924030128825/cu31924030128825_djvu.txt

Thread Boxes: (**See Sewing Boxes**) Thread manufacturers created their own boxes. This item possibly has more to do with a small box inside a larger sewing box.

Thumb Latches: Prior to the use of the door knob and locks after 1840, people trusted their neighbors. The standard way to secure the door was with a latch. The thumb piece was on the outside and was attached to the latch bar inside. Thumb latches that went to Santa Fe were either imported from England, transported from the east coast, or hand made in Cincinnati or St. Louis. Latches were identified by style names. The earliest prior to 1820 were called Suffolk Latches (England). Thomas E. Blake (American) is credited with several patents that collectively were called Blake Latches. Victorian latches were mass produced.

> www.oldhouseonline.com/tag/ehspringsummer2010/
>
> https://books.google.com/books?id=Pg10SiZWZGMC&source=gbs_all_issues_r&cad=1

Tin: Tin is a fundamental element (Sn) in use since 2100 BCE. It was found in Egyptian tombs, the Chinese used it in 700 BCE, and pure tin was discovered at Machu Picchu, Peru. Tin when combined with copper produces bronze. Tin plate is a sheet of iron or steel coated with tin. Its value is that it does not rust and can be shaped.

The early European industry began in Saxony in the 1600s and spread to England where it developed in Wales (1700s). The people associated with this trade were called tinners, tinkers, whitesmiths, or tinsmiths. By 1860, the term tinsmith predominated. Tinware (see objects below that were sent to Santa Fe) if not varnished or painted remained white. Its malleable nature allowed the tinsmith to shape it and inlay designs.

The trade came to the United States but was limited by British prohibitions until after the revolution. In the early 1700s, Shem Drowne and Edward Pattison established tinsmithing in Massachusetts. In 1738, Edward Preston settled in Berlin, Connecticut and began producing some of America's first tin ware. The tin ware trade existed in Missouri in the 1850s. New Englanders, Giles F. Filly and his brother were highly successful 'tinners' in St. Louis.

Peter Saalmueler from Pennsylvania moved to Missouri before 1858 and established his business in Franklin County. Because tinners did not create makers marks it is difficult to determine who was sending the items to Santa Fe. Tin objects were originally brought into Santa Fe from Mexico and or Spain as early as the late 1700s. Some tin objects (mirrors, retablos) were in evidence in the 1820 and 30s but no mention of tin ware. Although one Santa Fe tinner is mentioned, little tin was brought into Santa Fe until after the American occupation in 1846. Tin that arrived by wagons prior to the 1840s was primarily salvaged tin. Tin products were more evident after 1850.

www.rsc.org/periodic-table/element/50/tin

D. E. Dunbar, *The Tin-Plate Industry: A Comparative Study of its Growth in America and Wales (*Boston and New York*:* Houghton and Mifflin Co.,1915) https://books.google.com/books?id=GxA9AAAAYAAJ&pg=PA28&dq=Dunbar+the+tin-plate+industry&hl=en&sa=X&ei=u-m7VNT1F4zGsQS38oHwCg&ved=0CDgQ6AEwAg#v=onepage&q=Dunbar%20the%20tin-plate%20industry&f=false

http://tinware.winterthur.org/punched/

www.historythrougharts.org/main/program/trades/PF_Tinsmithing.pdf www.nh.gov/folklife/learning-center/traditions/tinsmithing.htm

www.robinhoodtinware.com/history.html

www.hotdiptin.com/blog/cat/news/post/Irish

https://books.google.com/books?id=DjlBceGASVoC&pg=PA424&lpg=PA424&dq=missouri+tinsmiths+1850&source=bl&ots=LGk4orQGaf&sig=EbKtScNiqybNp5f
Xi0Mlug_7yuE&hl=en&sa=X&ved=0ahUKEwjQ7uuDkIbRAhVryVQKHRkWDAUQ6AEIGjAA#v=onepage&q=missouri%20tinsmiths%201850&f=false

Lane Coulter and Maurice Dixon Jr., *New MexicoTinwork:1840-1940,* (Albuquerque, NM: University of New Mexico Press, 1990)

Tin Funnels Tin Soap Dishes Tinplate Jars Tin Pepper Dispensers Tin Glasses Tin Spittoon Tin Trunks Tin Washers (See Tin Above)

Tobacco Boxes: Tobacco boxes (not cigar boxes) were designed for storing various forms of tobacco for chewing, smoking, or sniffing (snuff). Tobacco boxes were in existence since the 1600s when the plant was cultivated in Virginia and sold in England. Boxes were made for carrying tobacco (smoking and snuff) on the person or for storage at home. Tobacco containers were traditionally called jars They were made form a variety of materials (brass, silver, enamel, tortoise shell, paper mache, horn, wood, and leather. Like sewing boxes, imported tobacco boxes could be purchased in New York and Philadelphia after 1750. By 1800, boxes became more and more elaborate with design and ornamentation. Apart from imported boxes from Europe, there were American companies in New York and Philadelphia, Pennsylvania where the tobacco industry was very important. Unfortunately, specific examples of boxes could not be found.

Nina Fletcher Little, *Neat and Tidy: Boxes and Their Contents Used in Early American Households*, (Hanover, NH: Society for the Preservation of New England Antiquities, University Press of New England, 2001)

www.ramshornstudio.com/tobacco_boxes.htm

http://collection.sciencemuseum.org.uk/objects/co157855/tobacco-jar-england-1840-1860-tobacco-jar

Tracing Forms: (*Calcadores*): This was a very difficult item to research because of the approaches to translation. One refers to a copying tool which could be associated with foot power. Another is associated with a tool that traces. Most likely 'tracing forms' means a 'tracing pattern' used in dress construction. If so, these forms would not have gone to Santa Fe until after 1860 when Ellen Demorest (millinery shop) and William Demorest (dry goods shop) married in 1858 and began creating patterns. In 1863, Ellen Butterick recommended to her tailor husband the desire to create a graded pattern that could be used for different sizes. James McCall, a Scotsman, emigrated to New York and in 1870 established the McCall Pattern Company.

www.officemuseum.com/copy_machines.htm

www.wordmeaning.org/Spanish/calcador.htm

http://historicalsewing.com/resources/patterns

www.pastpatterns.com/1830.html

http://fashion-history.lovetoknow.com/fashion-clothing-industry/fashion-designers/mme-demorest

https://butterick.mccall.com/our-company/butterick-history

www.myhappysewingplace.com/2012/01/who-was-james-mccall.html

Trunk Handles: The best handles were made by stitching together layers of leather. Less expensive handles were comprised of layers of pasteboard (cardboard) wrapped in oil cloth or leather. Steamed wooden handles did not come into use until after 1870. Caps (handle cap, end cap, loop) associated with handles were stamped metal rings that held the handle in place. There existed many pre-1850s trunk manufacturers who no doubt also sold parts. On the east coast was located Otis and Allen of Lowell, MA., Robert Bruff, Jacob Carver, Henry BuBosq, George Furgeson, of Philadelphia. The American Trunk Co. was located in Cincinnati in 1825.

www.hmsantiquetrunks.com/trunk-glossary.html

www.brettunsvillage.com/trunks/history/trunkmakersp.html

Vanities with Mirrors: Although the furniture capital of New England in the 1840s was Gardner, MA, furniture making was already underway in Cincinnati and St. Louis by the early 1800s. It was cheaper to make furniture and send it down and up the rivers than haul it across the continent. In 1825, the first circular saw was designed and used in Philadelphia by Taylor, Rich and Company at the first mahogany mill in America.

Gilded and varnished sideboards, bureaus, secretaries, and settees were manufactured in Cincinnati. Robert Mitchell established a company in 1834. By 1851, C.D. Johnson Furniture Co. was considered the largest in the world. The Mitchell and Rammelberg Furniture Company was established in 1860. In 1810, Pennsylvanians Heslep and Taylor announced their intention to produce chairs in St. Louis. In 1813, Philip Matile from Switzerland opened a shop.

Laville and Morton arrived in St. Louis with a flatboat full of lumber and tools. Between 1840 and 1860 furniture making was one of the great industries in St. Louis. In 1847, Paris H. Mason and Russell Scarritt began manufacturing. Messrs. Condrades and Logemen followed in 1854 and the following year Joseph Peters was making specialty bureaus and cabinets.

> www.fourcenturies.org/timeline/furniture-capital/
>
> Chauncey M. Depew (ed.), *One hundred Years of American Commerce: A History of American Commerce by One Hundred Americans* (New York: D. O. Hays, 1895.) https://babel.hathitrust.org/cgi/pt?id=uc1.31175035226698;view=1up;seq=864;size=125,(Colorado State University Library)
>
> **They Built a City; 150 Years of Industrial Cincinnati**, Cincinnati Federal Writers' Project of the Works Progress Administration in Ohio, Cincinnati Post, 1938. https://babel.hathitrust.org/cgi/pt?id=mdp.39015042081854;view=1up;seq=381 (Colorado State University Library)
>
> Walter B. Stevens, *St. Louis, the Fourth City: 1764-1909*. c.1 v.1. 1848-1939 https://babel.hathitrust.org/cgi/pt?id=chi.43322836;view=1up;seq=656 (Colorado State University Library)
>
> http://cool.conservation-us.org/jaic/articles/jaic32-02-003_1.html
>
> Lonn Taylor and Dessa Bokides, *New Mexico Furniture: The Origins, Survival, and Revival of Furniture Making in the Hispanc Southwest*, (Albuquerque, NM: Museum of New Mexico Press, 1987)

Varnish: Varnish is used to give a luster to furniture and to preserve wood products. Its history goes back to China and Japan (lacquer of different colors). Its American history follows along with American industry. There were many types of varnishes for different uses. The common, white hard varnish for furniture was made by combining rectified spirits of wine, gum sandrach (an African sap), gum mastic (a resin), and gum anime (a resin). When dissolved, it was strained. There were also varnishes for pictures and drawings (added turpentine to above), and musical instruments.

Prior to 1828, all varnishes were imported with the exception of some production first attempted in Cambridge, MA. in 1820. This company evolved into Valspar

Corporation. In 1828, varnish was first produced in the Bowery in New York City by P.B. Smith. Thereafter, producers Tilden & Hurlbert, Smith & Price of Newark, N.J., and Christian Schrack, of Philadelphia followed Smith's lead. Three were producers west of the Alleghenies. One was the Great American Varnish Company established in Cincinnati in 1840 by Jon Pfaff.

> George A. Siddons, *The Cabinet Maker's Guide, or, Rules and Instructions in the Art of Varnishing, Dying, Staining, Japanning, Polishing, Lackering, and Beautifying wood, Ivory, Tortoiseshell, & Metal* (London: Sherwood, Gilbert, and Piper, 1837) https://ia802705.us.archive.org/6/items/cabinetmakersgui00sidd/cabi netmakersgui00sidd.pdf
>
> Chauncey M. Depew (ed.), *One hundred Years of American Commerce: A History of American Commerce by One Hundred Americans* (New York: D. O. Hays,1895) https://babel.hathitrust.org/cgi/pt?id=uc1.31175035226698;view=1up;seq=864;size=125 (Colorado State University Library)
>
> http://billheads.blogspot.com/2009/09/paint-oil-varnish-billheads.html
>
> "Official Journal of the Brotherhood of Painters, Decorators and Paperhangers of America". The Brotherhood, 1900-1905, Lafayette, IN, Volume 18. https://babel.hathitrust.org/cgi/pt?id=wu.89062192562;view=1up;seq=18
>
> http://valspar.com/about/history.jsp
>
> www.fundinguniverse.com/company-histories/the-valspar-corporation-history/
>
> A. N. Marquis *The Industries of Cincinnati. The Advantages, Resources, Facilities and Commercial Relations of Cincinnati as a Center of Trade and Manufacture* (Cincinnati: A. N. Marquis & Co.,1883) https://babel.hathitrust.org/cgi/pt?id=wu.89073035123;view=1up;seq=10

Vermilion: (Chinese Red) This item is the name for the brilliant red pigment made from mercury sulfide (HgS/ cinnabar). Originally it was obtained (heat separation) from cinnabar, a toxic mercury sulfide mineral (HgS) and was extremely toxic. It has been used as a pigment for thousands of years. It was used to create drawings in ancient caves, used by the Greeks and Romans to adorn buildings, statues and faces, and used in Chinese and Japanese red lacquer.

Today most cinnabar is made from less toxic processes but is still found on antiques. In the 1800s, the purest form of vermillion came from Asia or South

America. Cheaper creations came from Europe where it was made with brick dust, orpiment, iron oxide, Persian Red, iodine scarlet, and red lead. Matt Field noted in his 1839 journal that he saw girls with "...blotches of vermilion on their cheeks..." This item, although under the category household, could have been used in a number of contexts including art, cosmetic, dying fabric, and canning.

www.dictionary.com/browse/vermilion

www.google.com/webhp?sourceid=chrome-instant&ion=1&espv=2&ie=UTF-8#q=cinnabar

http://geology.com/minerals/cinnabar.shtml

www.winsornewton.com/na/discover/articles-and-inspiration/spotlight-on-vermilion

http://mercurypolicy.scripts.mit.edu/blog/?p=367

John L. Sunder, *Matt Field on the Santa Fe Trail*, (Norman and London University of Oklahoma Press, 1960)

Wax: The Spanish term *cera* is a bit confusing when determining whether it was meant for natural wax, before or after 1830, or paraffin which is a man-made petroleum product produced after 1850. Prior to 1830, 'natural' waxes came from bees, rendered animal fat, spermaceti, palm, carnuaba wax (plant) from Brazil, candelilla wax, soya, and sunflowers. (See Candles Above). Natural wax was used for cosmetics, polish, and sealing letters (See Letter Sealers), and as a lubricant. Because women's cosmetics were frowned upon by the clergy, the use of wax for cosmetic use in Santa Fe was not likely used until the 1850s when *Crème Céleste*, a moisturizing product made from a mixture of white wax, spermaceti sweet almond oil, and rosewater became available. A product like this would not have been logically listed as a household product so it was probably for non-cosmetic use around the house.

www.greenchemical.jp/member/201003/eng/tokushu2.pdf

www.katetattersall.com/early-victorian-era-make-up/

www.victorianpassage.com/2009/07/unfolding_the_mysteries_of_sea.php

Washing Basins: (See Hardware Note)

White Metal Glasses: (See Also Tin Above) (See Glasses In Personal Category) white metal is a tin alloy and this item most logically refers to a drinking cup.

Writing Tables: (See Also Vanities with Mirrors Above)

Whitewash Brushes: (See Mud Brushes Above)

Wire Mesh: This product was mentioned in the August 29th edition of *American Farmer*, an agricultural journal started in 1819. Gilbert and Bennett Manufacturing of Redding/ Georgetown, Connecticut invented wire mesh screens as a result of their work with curled hair and horse hair sieves. In 1839, two wire window screens were exhibited in Boston, Massachusetts. Mesh screen production began in the 1840s after the company realized it could be used for more than making flour sieves. The Jacob Bromwell Company of Cincinnati was initially started in 1819 and by 1840 became a major supplier of kitchenware (tin cups), house wares, and later wire and brush products. Most likely wire mesh did not go to Santa Fe until after 1865.

https://ia601408.us.archive.org/20/items/americanfarmer2324balt/american farme r2324balt.pdf

http://scttx.com/articles/screen-door-neal-murphy

http://historyofredding.net/HGgilbertbennett.htm

http://blogs.grit.com/print?printid=%7B82FA1473-6DE3-4F65-A06A-121DEA4A4776%7D

www.ehow.com/about_5408159_history-window-screens.html

www.jacobbromwell.com/about us

Wooden Serving Trays: Too general to determine.

FABRIC

Introduction

Initially this list appeared simple and easily addressed. Once into the research there were issues with language usage. Many times, searches demonstrated differences between modern and historical usage. In some instances, a fabric that was historically very specific evolved into a generic product- much like how we today use the term 'kleenex'. In other instances, a product or fabric called one thing was actually either constructed from one raw material (fiber) or was a hybrid. Today there are more than forty natural and manmade (synthetic) fibers used in the construction of fabrics and ultimately apparel. As of 1821, twelve natural fibers existed. Of those, five are relevant to the Santa Fe Trail supply chain.

In order to simplify this section, the relevant fundamental fibers will first be described and relevant history provided. Secondly, a brief history of textile manufacturing in the 18th and 19th centuries will create a context with which to better understand when and where the fabrics were manufactured. Lastly, the specific products will be listed and described.

> https://textileapex.blogspot.com/2015/09/raw-materials-used-in-textile-industries.html

Cotton Fiber

Cotton is the soft white fibrous material composed of the hairs (fibers) surrounding the seeds of the tropical plants *Gossypium*. This fiber has been utilized for thousands of years dating back to the Indus River Valley (Pakistan), Egypt, and South America. Arab merchants sold cotton cloth to Europeans in the early 800s. By 1500, its cultivation and use had spread around the world. Cotton imports in western Europe were expensive but, as European colonial exploitation expanded, countries like England acquired greater supplies of the fiber.

Two types of cotton were eventually cultivated in North and South America. The North American specie was called 'short-staple' (upland cotton) but had more seeds than the specie grown in South America where the specie was more easily worked but required a hotter climate. The process of cotton production, weaving and cloth and clothing making continuously changed as a result of technological developments. Cotton importation from India hurt the woolen industry but even with cotton import restrictions in the early 1700s, American cotton became a cheaper slave based source of the fiber for processing in England.

> www.merriam-webster.com/dictionary/cotton
>
> www.cotton.org/pubs/cottoncounts/story/
>
> http://quatr.us/clothing/cotton.htm

Flax Fiber

Flax is any of a genus (*Linum* of the family Linaceae, the flax family) of herbs-especially a slender erect annual (L. *usitatissimum*) with blue flowers commonly cultivated for its bast fiber and seed. Bast fiber is found all along the interior of the stalk. When extracted the fiber's length and fineness can be altered by mechanical and chemical processes. This plant was one of the earliest plants used and later cultivated by humans across southwest Asia, north Africa, and southern Europe.

In some places, evidence suggests it was used as early as 8700 BCE to 4000 BCE. Egyptians used flax cloth in the mummification process. Its inherent qualities lend itself to spinning. The high pectin content when wetted acts as a glue to bind the fibers into thread. Flax thread has a high tensile strength and the fabric (linen) is absorbent, and quickly dries. If not affected by synthetic bleaches or mechanical drying linen can last for decades. Linen was the name for fabric made from flax fibers. Linen production was in existence in England, Scotland, and Ireland in the early 1700s.

www.merriam-webster.com/dictionary/flax

http://www.swicofil.com/lambacherflaxfiber.html

www.hort.purdue.edu/newcrop/afcm/flax.html

Flax Fibre: Innovation and Change in the Early Neolithic A Technological and Material Perspective (Textile Society of America Synposium, 2014, Susanna Harris University College London) http://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=1904&context=tsaconf

www.nps.gov/jame/learn/historyculture/flax-production-in-the-seventeenth-century.htm

http://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=1604&context=tsaconf

Hemp Fiber

Hemp is a tall herb identified as Cannabis sativa of the family Cannabaceae (hemp family). It has a tough bast fiber used for cordage and cloth fiber. Tests have confirmed that the weaving of hemp fiber has been around prior to 8,000 BCE. Research of specialists from the German Archaeological Institute and the Free University of Berlin concluded that hemp was used in Europe and east Asia at the same time as in China and central Asia (between 11,560 and 10,200 years ago). Its cultivation and use are documented in historical Chinese, Hindu, African, and Persian documents. As early as 800 CE, hemp was cultivated in Great Britain. In the 1500s, Henry VIII encouraged farmers to grow the herb for use in the construction of ships, riggings, flags, sails, and paper.

The herb was already in the new world when European colonists arrived. It is speculated it was brought from Asia across the Bering land bridge. The cultivation and use of hemp was an integral part of American Colonial and post revolutionary history until law (1937) affected it cultivation. That situation has again changed. Historically, the fiber was processed the same way as with the bast fiber of flax.

Today hemp (fabric fiber) is commonly confused with marijuana- a different cannabis plant. The chemical THC (tetrahydrocannabinol) content in 'industrial' Hemp is 1% as contrasted to 20% in the smoked or ingested type.

www.merriam-webster.com/dictionary/hemp

www.hemp.com/history-of-hemp/

http://hemplogic.blogspot.com/2016/07/surprising-5000-year-old-cannabis-trade.html

www.globalhemp.com/2001/01/hemp-history.html

www.madehow.com/Volume-6/Industrial-Hemp.html

Silk Fiber

From the Chinese *seres* to the Latin *sericum*, silk is the fine, continuous, lustrous, tough, elastic, protein fiber produced by a variety of silkworms (moths). The term also means thread, yarn, or fabric made from the fiber. Its cultivation is called 'Sericulture'. The most important moth is the blind, flightless *Bombyx mori* moth. Of all the natural fabrics, silk is the most intriguing because its cultivation requires great human sensitivity when interacting with the larvae and moths. A wonderful treatment of the subject can be found in the third site listed below.

Sericulture originated in China. Bimolecular research findings (2016) from work with silk fibroin peptides found in Neolithic Age tombs in Henan Province, China showed that sericulture was evident 8,500 years ago. Sericulture remained a 'Chinese Secret' but moved west to India and eventually east to Korea. From India it expanded to the cultures of Greece and Rome.

Around 550 CE, it arrived at Emperor Justinian's Byzantium court in Constantinople. The church developed sericulture, but Chinese silk textiles (Silk Road trade) continued to be superior. Sericulture made its way to Italy in the 1200s and was introduced into France in 1480, but production did not begin until 1520 (Lyon). Silk products were introduced into England in the 1200s but sericulture did not commence at a fundamental level until the late 1500s (Elizabethan Age).

During the next hundred years English sericulture expanded due to demand, political issues with France, and Parliamentary protection. Viable silk production was first established in London (Spitalfields) after Huguenots (French Protestants) fled Lyon, France in 1685. Silk weaving was expanded into the cities of Derby, Dublin, Coventry, Macclesfield before 1800 and later Manchester.

Because of growing issues, the silk had to be imported from the east (India, Bengal) for weaving in these centers. For various reasons the industry struggled along while manufacturing all types of silk products. At the same time, the French silk industry was producing silk products of a higher quality but was restricted from selling in England. After 1826, an open market was established and thereafter the British silk industry slowly faded as French products were accessible and cheaper.

www.merriam-webster.com/dictionary/silk

www.silk-road.com/artl/silkhistory.shtml

www.wormspit.com/bombyxsilkworms.htm

http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0168042

J. R. McCulloch, *A Dictionary, Practical, Theoretical, And Historical, of Commerce And Commercial Navigation* (London: New Edition, Hugh G. Reid (ed.),Longmans Green and Co., 1871)

www.derbymuseums.org/locations/silk-mill

https://sites.textiles.ncsu.edu/history/textile-industry-history/silk-in-america

Wool Fiber

Unlike the fibers above, wool comes from numerous types of animals. Each type of wool has its own characteristics, uses, and history. Wool should not be confused with fur. Animal wool is sustainable in that once procured the wool will grow back- as contrasted to fur which is the dressed and or processed pelt of a dead animal.

The history and use of wool also goes back thousands of years to the domestication of animals and the subsequent textile manufacturing in Mesopotamia around 3000 BCE (Sumerians). Thereafter sheep breeding was spread west by the Persians, Greeks and Romans. The Romans established a wool plant in Winchester, England around 50 CE. During the 700s, sheep and wool processing knowledge was disseminated across north Africa and into Spain. By 1200, there was weaving in Italy.

The breeding of sheep and the procurement of wool was highly protected by the monarchs of England, Spain and France in the 17th and 18th centuries. However, like other materials and processes, technological knowledge made its way to foreign lands including colonial and post revolutionary America. The Spanish wool industry monopoly ended after 1810 and new centers were established in Germany, Australia, and even Vermont until the late 1840s when the industry collapsed.

www.linenme.com/news/find-out-types-and-benefits-of-wool/

www.fashionencyclopedia.com/fashion_costume_culture/The-Ancient-World-Mesopotamia/Mesopotamian-Clothing.html

https://d1cqrq366w3ike.cloudfront.net/http/DOCUMENT/SheepUSA/HistoryOfWool.pdf

www.simplymerino.com/The-History-of-Merino-Wool_b_7.html

Effects of the Industrial Revolution on Textiles in Great Britain, France, and the United States

What is known as the First Industrial Revolution (Great Britain) took place in the second half of the 18th century as a result of new energy sources, increased food production, a financial infrastructure, natural resources (coal, iron ore), political stability, intellectual freedom, colonial markets, a merchant marine system, and technology which had been evolving from the work of Isaac Newton and other early thinkers who formulated natural laws. Mechanical power slowly replaced human power as a result of the application of those scientific laws.

England was already a major European textile producer prior to the Industrial Revolution. Wool and flax production thrived in the damp climate. Flax based linen in combination with wool made the famous 'linsey-woolsey'- a plain woven fabric with a linen warp and a woolen weft. Cotton and woolen textile workers (individuals and even families) were the foundation of the pre-industrial textile industry. Sources of fibers were 'harvested', processed, spun, and woven on looms. Many times, a merchant would supply the materials and come back for the finished product ('putting out system').

The invention of the 'flying shuttle cock' (1733) improved the speed of loom weaving, but the major technological advancements developed thereafter. The 'spinning jenny' (1764) improved cotton thread manufacturing. Richard Arkwright designed the first water powered spinning wheel ('water frame') in 1771 to draw out cotton before it was twisted. Samuel Crompton designed a 'spinning mule' (1774) that combined the spinning and weaving processes. In 1785, the Reverend Edmund Cartwright patented the first power loom (steam) and installed it in Manchester after 1800. Its design and efficiency evolved over time. The first cotton imports went to America in the 1790s. Thereafter, 'machinery' ('factory system') replaced the domestic system of production.

France was less affected by the technological changes because of the monarchy, the revolution of 1789, and the subsequent flight of businessmen and entrepreneurs out of France. Napoleon's effect on textiles was militarily (clothing) oriented. The invention of the Jacquard Loom cannot be dismissed but meaningful technological changes did not come until after 1830 when returning Frenchmen brought back technology and knowhow from Great Britain. Despite the late developments in the French textile industry, Lyon continued its tradition for silk production and Rouen became known for cotton.

Textile work in America was originally a mosaic of different styles, approaches, and types of construction due to the variety of European settlers and the British policy of mercantilism that protected English technology. What we today call 'industrial espionage' gave rise to America's first factory in 1790. Samuel Slater, an English cotton mill superintendent, desiring to get rich by bypassing British 'technology transfer' laws, arrived in New York in 1789 and made his way to Pawtucket, Rhode Island with memorized factory plans.

There he improved on an existing mill in 1790 and by the early 1800s built his own 'factory town'. Thereafter, Slater's small scale operation was superseded by the 'Waltham- Lowell System' developed by Francis Cabot Lowell, who, after traveling around Great Britain absorbing factory information, returned to Massachusetts to establish the Boston Manufacturing Company in 1813. He and his partners and mechanic established the first vertically integrated factory.

Lacking adequate water power from the Charles River, they moved operations to the Merrimack River where they created a series of canals, mills, and housing facilities which after Lowell's death came to be the city of Lowell, Massachusetts. Although the largest mills were centered in New England, the textile industry expanded to New York (knitting), the Middle Atlantic states (specialty fabrics like brocades, damasks, prints), and the Midwest, and South. With expansion of the industry, American inventions contributed to expanded production.

From 1815 to 1860, there were two types of textile companies operating in New England. The Massachusetts type (16 mills) was a large operation which mass produced low count goods. The smaller Rhode Island type (5 mills) were small single propriety mills that produced medium grades. The cotton gin gave impetus to the creation of New York mills. Plantation owners too busy growing cotton to be concerned with or interested in manufacturing products arranged with New York Shippers to take cotton back north after they unloaded their cargos. New York businessmen created The Harmony Cotton Manufacturing Company in Cohoes, New York. Located just north of Troy and Albany. The town was called 'Spindle City' and later evolved into The Harmony Mills which greatly expanded after the construction of the Erie Canal.

Pennsylvania's textile work (1700s) was initially conducted in small operations where a wide variety of textiles were produced by various ethnic groups. There were mills in Philadelphia as early as 1720. By 1764, power machinery was evident.

Calico was produced after 1772. Between 1791 and 1810, Philadelphia created a monopoly in carpet weaving. At the turn of the century, Philadelphia was a prominent producer of cotton, thread, yarn, and hosiery. By the late 1820s there were 104 mills in the Philadelphia area. Each mill had a specific name that long endured through census records from the neighboring communities of Manayunk, Germantown, and Kensington.

By 1850, Joseph Ripka, an Austrian immigrant in 1816 and an early pioneer in textiles, became the largest cotton manufacturer in the United State. From Manayunk, he marketed his goods throughout the United States. Charles Spence emigrated from Nottingham, England in 1842 and established hosiery production a year later in Germantown just north of the city. The Kensington area became a carpet manufacturing center. Just prior to the Civil War, there were 4,700 looms operating in more than 300 textile mills in Philadelphia. John Rich established a woolen mill just west of Williamsport, PA. where he manufactured and sold his famous 'Woolrich' clothing to river men, miners, and loggers. By 1845, he expanded and moved operations to Woolrich, PA. Numerous cotton mills were also located around Pittsburgh and Allegheny City in the 1840s.

The United States developed its own linen industry in New England. In 1810, linen was being produced in private households in Maine. By 1845, operations were producing linen in Andover, Braintree, Dudley, Fall River, Ludlow, and Walpole, Massachusetts. However, as cotton became 'King', the American linen industry lost profitability and flax production was greatly reduced after 1850. Over time, the name linen acquired other meanings and today can be used generically to describe non-linen products or a place (linen closet) to store bedding, towels, washcloths, etc.

Attempts at American sericulture (Silk) date back to Jamestown (1620s), but the ease of tobacco cultivation ended silk work. It was also tried in Georgia and South Carolina in the in 1730s and discussed in Pennsylvania in the late 1760s. Benjamin Franklin attempted a 'filature' (sericulture site) in Philadelphia in 1770 but lack of knowledge ended the project. It did take hold in Connecticut in 1760 when a new mulberry plant was introduced by nurseryman Nathan Aspinwall and then used by Dr. Reverend Ezra Stiles (later Yale President) to cultivate silk. Mansfield, Connecticut had numerous silk mills in operation between 1800 and 1860- the most important being the Mansfield Silk Co. (1827) that also operated mills in Massachusetts. By 1840, in addition to Rhode Island, Massachusetts, and New Hampshire, there were silk companies in New York, Eastern Pennsylvania, Ohio, Virginia, Kentucky, and Tennessee. Many of the silk companies also produced trimmings, fringes, ribbons, and coach lace.

The American silk industry was devastated by the effects of an economic panic in 1837, the harsh winter in 1840, and mulberry blight in 1844. Sericulture ended in New England and most manufacturing was done with imported silk. Most work with silk dealt with trimmings, fringes, and thread. However, by 1860, many new companies had come back into existence making trimmings, fringes, handkerchiefs, and dresses.

Textile manufacturing came late to the South. As stated above, southern growers were more interested in the income from the raw fiber than processing it. There were small textile sites in Georgia and across the south, but they never developed and were adversely affected during the war. Most weaving was associated with individual plantations and not designed for commercial work.

Four brothers (Bowen) built the Banning Mill in Georgia in 1842, but it never flourished. The first power operated mill in Mississippi was built at Natchez in 1842 by John Robertson but was a failure. In 1844, he and Boston interests bought the bankrupt Natchez Cotton Compress and attempted to operate it with New England workers. Although it closed by 1848 other attempts to establish operations continued in the South but never competed with northern mills. The textile industry associated with the 20th century did not develop until after the 1880s. With the exception of specialty items specifically associated with foreign countries, the great majority of fabrics and textile products going to Santa Fe between 1821 and 1860 were made in the United States. Other 'specialty' items may have been imported from Europe or Mexico.

http://study.com/academy/lesson/causes-of-the-first-industrial-revolution.html

www.historytoday.com/stephen-clarke/industrial-revolution-why-britain-got-there-first

http://webs.bcp.org/sites/vcleary/modernworldhistorytextbook/industrialrevolution/irbegins.html

https://britishheritage.com/british-textiles-clothe-the-world/www.bl.uk/georgian-britain/articles/the-industrial-revolution

http://cwh.ucsc.edu/brooks/India,_Britain_and_America.html

https://searchinginhistory.blogspot.com/2015/03/the-industrial-revolution-of-france.html

www.pbs.org/wgbh/theymadeamerica/whomade/slater_hi.html

www.asme.org/getmedia/105d53b5-2a06-48f4-911c-4485ec4e4650/251-19th-Century-Textile-Tools.aspx

Lance E Davis and, Louis Stettler III, *The New England Textile Industry, 1825-60: Trends and Fluctuations*, 1966)
www.nber.org/chapters/c1569.pdf

Oliver E. Allen, *New York, New York: A History of the World's Most Exhilarating and Challenging City* (New York: Macmillan, 1990)
www.novelguide.com/reportessay/history/american-history/growth-new-york-1825-1860

David M Ellis., et al*.* *A History of New York State* (Ithaca: Cornell UP, 1967)
www.novelguide.com/reportessay/history/american-history/growth-new-york-1825-1860

www.harmonymillslofts.com/harmony-mills-history/

http://explorepahistory.com/story.php?storyId=1-9-1F

www.preservationalliance.com/wp-content/uploads/2014/09/KensingtonNR.pdf

Philip Scranton , *Proprietary Capitalism: The Textile Manufacture at Philadelphia 1800-1860* (New York: Cambridge University Press,1983)

www.woolrichfabrics.com/story.php

http://explorepahistory.com/hmarker.php?markerId=1-A-BD

https://georgiatextilemills.wordpress.com/264-2/

Paul E. Rivard, *A New Order of Things: How the Textile Industry Transformed New England* (Hanover, NH: University Press of New England, 2002)

http://char.txa.cornell.edu/ppeamericatex.htm

http://digitalcommons.wku.edu/cgi/viewcontent.cgi?article=1005&context=dlsc_fac_pub

Field, Jacqueline and Senechal, Majorie, and Shaw, Madelyn, *American Silk 1830-1930* (Lubbock: Texas Tech University Press, 2007)

www.smith.edu/hsc/silk/papers/baird.html

Wm C. Wyckoff , *American Silk Manufacture* (Trenton, New Jersey: John L. Murphy Publishing Co., 1887)

https://ia802700.us.archive.org/19/items/americansilkman00amergoog/americansilkman00amergoog.pdf (Colorado State University)

https://sites.textiles.ncsu.edu/history/textile-places/georgia-textile-mills

www.mansfieldct-history.org/silk-mills-of-mansfield/

https://connecticuthistory.org/connecticuts-mulberry-craze/

http://narvellstrickland1.tripod.com/cottonmillhistory2/index1.html

James D. Clayton, *Antebellum Natchez* (Baton Rouge, LA: Louisiana State University, 1968)

http://msgw.org/choctaw/bankstonhistory.html

Baize with Velvet Finish: Baize, from the Medieval French term *baie* (chestnut colored) first used around 1578, was a felt-like woolen material that was dyed in numerous colors. The idea of a 'velvet finish' meant it was smooth. Green was typically used for pool tables, writing desks, box liners and applied to doors denoting the separation of servants from the owners. In other colors it was used for aprons and clothing. In 19th century America, baize was also called broadcloth but this product would have been coarser. **(See Also Cotton Baize Below)**

www.merriam-webster.com/dictionary/baize

https://en.oxforddictionaries.com/definition/baize

https://janeaustensworld.wordpress.com/2012/01/27/the-green-baize-door-dividing-line-between-servant-and-master/

https://info.fabrics.net/difference-poplin-broadcloth/

Black Ribbons for Veils: **(See Also Ribbons Below)** This product was used to make both religious and mourning apparel. A *mantillas* was a head covering used when attending Mass. In 1840, "The Workwoman's Guide" was published in England. In Chapter VI it gives instructions regarding sewing mourning apparel. It describes a particular type of mourning ribbon as 'love ribbon.

https://catholicismpure.wordpress.com/2014/01/15/why-women-wear-mantillas-in-church/

www.katetattersall.com/mourning-dress-victorian/

Workwoman's Guide by a Lady (University of Minnesota: Piper Publishing, 2002), (Avenir Museum of Design and Fashion, Colorado State University)

Bocasi: (Spanish term meaning cotton stuff) Also identified as Bombasi and Bombazine, it was a fine linen or cotton fabric used as a lining to give body to the clothing. Bombazine could also be a multi blend twilled dress fabric.

> www.oedilf.com/db/Lim.php?Word=bocasin
>
> Phyllis G Tortora , Ingrid Johnson, and Robert Merkel, *Fairchild Books Dictionary of* Textiles (New York, NY: Fairchild Publishing, 2017)
>
> http://coxresearcher.com/definitions/fabrics.htm

Brittany Cloth: (*bretana*) Brittany, France was a textile center dating back to the late middle ages. This cloth was sold in Mexico as early as the 1700s. It was divided into sizes wide, medium, narrow, and then subdivided into levels of qualities. *Bretana* was the name used in Mexico in the 1700s. It was originally a plain woven linen product.

> www.bretagne.bzh/jcms/prod_189639/fr/brittany-and-its-history
>
> Jose De la Torre Curiel, *Twilight of the Mission Frontier: Shifting Interethnic Alliances and Social Organization in Sonora, 1768-1855* (Stanford University Press, 2013)
>
> Phyllis G Tortora, Ingrid Johnson and Robert Merkel, *Fairchild Books Dictionary of Textiles,* (New York, NY: Fairchild Publishing, 2017)

Calico (Common), Calico (Painted), Calico (Fine): Calico was first encountered by the Portuguese in Kozhikode, India (Calicut in Dutch, Calcutta in English) in 1500s and by the Dutch in the 1600s. Prior to 1700, the British not only imported calico prints but also began to dye their own. After 1700, the British East Indies Company primarily imported 'common' calico which was a plain woven unprocessed, unbleached, and un-dyed cotton.

English producers began making clothing. By the 1820s, densely patterned print calico was in demand in America. Thereafter, the use of the term changed. In England the word calico became more generically associated with the plain fabric described above. In America, the plain fabric was called muslin. Common, painted, and fine calicos were used to make dresses, petticoats, sunbonnets, aprons, and quilts.

Between 1765 and 1846, calico manufacturing was centered in the areas of Manchester and Lancashire, England. Calico was printed in New England by the 1820s and 30s and by 1840 there were 1240 production factories. However, the calico used for quilts was imported. (See Mahon Below) http://fashion-history.lovetoknow.com/fabrics-fibers/calico

http://thedreamstress.com/2010/06/calico-muslin-gauze-a-history-of-fabric-terminology-part-i/

http://thedreamstress.com/2010/06/calico-muslin-gauze-a-history-of-fabric-terminology-part-2/

www.reference.com/hobbies-games/calico-fabric-984267d405be09#

www.textileglossary.com/terms/calico.html

http://historicalsewing.com/fabric-choices-for-19th-c-costumes-part3-cotton

K. L. Wallwork , *The Calico Printing Industry of Lancastria in the 1840s,* (The Royal Geographical Society with the Institute of British Geographers,1968), http://www.jstor.org.ezproxy2.library.colostate.edu:2048/stable/621398?seq=1#page_scan_tab_contents also: http://www.jstor.org/stable/621398 (Colorado State University)

Mary Ellen Snodgrass, *World Clothing and Fashion: an Encyclopedia of History, Culture and Social Influence* (Armonk, New York: M. E. Sharp, 2014)

Barbara Brackman, *Clues in the Calico: A Guide to Identifying and Dating Antique Quilts* (McLean, VA: EPM Publications, 1989)

Cambric: Pure cambric was soft, fine white linen cloth produced in Cambrai, France (northeast of Paris near the Belgium border) in the 1500s. It was used in the making of undergarments, shirts, linen and fabric for lace, needlework, table linens, ruffles, frills, collars, baby wear, and church embroidery. By the 1800s, cambric textiles included both linen (flax) and cotton.

www.utsavpedia.com/textiles/cambric/

www.textileglossary.com/terms/cambric.html

www.typesofclothingfabrics.com/cambric.shtml

http://angelasancartier.net/cambric-batiste-and-lawn

Canvas (Fine): The word comes from the Arabic term for *cannabis* (Latin for hemp). Its use dates back to China around 3000 BCE. Whereas hemp was the original material it was replace by cotton. The type of canvas going to Santa Fe during this time was most logically used for clothing (shirts, pants, frocks), shelter, wagon covers, and possibly art in later years.

Because the term is 'fine canvas', it most likely meant a type of canvas that is today called 'cotton duck' or 'cotton canvas' from the Dutch term *doek*. This type of canvas was used to make sailors' white outerwear. Because of its weave and strength, and easily oiled for waterproofing, it would no doubt have been considered 'fine'.

www.123canvas.com/canvas-history.html

http://courses.wcupa.edu/jones/his101/misc/dates.htm

www.bigduckcanvas.com/categories/resources/what-is-duck-cloth.html

www.ehow.com/info_8091044_types-canvas-fabric.html

Cashmere: (See Also Cashmere from Rouen Below) This fabric comes from the sheared or combed soft, downy undercoat (wool) of a *Capra hirus laniger* goat. It was originally referred to as *Pashmina* (Persian for wool). References to the fabric date back to 3rd century Indian documents but the term *cashmere* was created in the 1500s to denote scarves and shawls made in the Kashmir region of India.

Europeans were introduced to it in the late 18th century when printed 'pashmina' shawls were exported to England from Kashmir, India. Napoleon brought back the cashmere scarves from his Egyptian Campaign. The trade from Ladakh (Tibet) was expanded due to the popularity of the fabric among the aristocracy. The first goats were exported into France in 1819. Thereafter William-Louis Ternaux began weaving cashmere and later sold it to the early cashmere industry in Scotland.

By 1830, France, Italy, and Paisley Scotland were the leading producers. A Captain Charles Stuart Cochrane received a patent to produce cashmere wool in 1831 and sold the patent to Henry Houldsworth and Sons (Glasgow) who in 1832 began manufacturing cashmere yarn.

In the United States, Uxbridge, Massachusetts employed power looms that made cassimeres (obsolete spelling for cashmere) in 1825. An advertisement from an 1841 paper listed cassimeres as a product of the Gardiner Woolen Factory in Maine. In 1843, William Crompton installed cassimere looms at his Harrisville Woolen Mill in New Hampshire. The looms were built in Worcester, Massachusetts under a royalty agreement and originally intended for cotton weaving.

www.fibre2fashion.com/industry-article/7051/washing-details?page=1

http://johnhanly.com/blog/cashmere-history-and-origins/

www.victoriana.com/Shawls/paisley-shawl.html www.cashmeregoatassociation.org/cashmere-industry/

www.fabulousyarn.com/jades_cashmere8.shtml

www.purepackage.com/8242-2/

www.cashmere-yarn.com/newsd-7-951.html

www.onecashmere.com/en/history-cashmere/

www.londonw11.com/blog/cashmere-short-history/

www.independent.co.uk/life-style/the-history-of-cashmere-the-golden-fleece-1196401.html

www.sec.state.ma.us/mhc/mhcpdf/townreports/Cent-Mass/uxb.pdf

Paul E. Rivard, *A New Order of Things: How the Textile Industry Transformed New England* (Hanover, NH: University Press of New England, 2002)

Cashmere from Rouen: Rouen was called the Manchester of France. Rouen's textile industry experienced positive changes as a result of the introduction of new technology during Napoleon's control but also suffered after 1810 with the effects of the British blockade and loss of raw cotton. Even with the blockade, fabrics, fashion, and information from the 'East' initiated an 'Orientalist' movement in fashion in which cashmere was highly valued. The French obsessed over the cashmere shawl in the 1830s. These shawls were initially sent back to France by the military and later imported from India. The 3,000 cashmere shawls exported through the port of La Havre in 1826, were most likely not made in Rouen. This item to Santa Fe may have been a finished product exported into France and then exported or was cashmere yarn product from France made in or exported out of Rouen.

http://www.napoleon-series.org/reviews/general/c_daly.html

Adam Geczy, *Fashion and Orientalism: Dress, Textile and Culture from the 17th to the 21st Century* (New York: Bloomsbury Academic, 2013) (Colorado State University Library)

S. G. Goodrich, *A Pictorial Geography of the World*, Vol 1 (Boston: Charles D. Strong, 1856)
https://books.google.com/books?id=QrVMAAAAYAAJ&pg=PA170&lpg=PA170&dq=french+cashmere+production+in+Rouen+1830&source=bl&ots=XIQJwghW9Z&sig=RFEAHlwOZmUl0ow4v0DP4UDp9_A&hl=en&sa=X&ved=0ahUKEwjvsPOo_fvRAhVMyFQKHZFvDO4Q6AEIIzAE#v=onepage&q=french%20cashmere%20production%20in%20Rouen%201830&f=false

www.fabulousyarn.com/jades_cashmere6.shtml

Castille Wool: (Regular and High Quality): Considering the Spanish industry went into decline after 1810, this product could have come from a number of locations. **(See Wool Above)**

Chinese Hemp Cloth: This cloth could have been associated with coverings (sail, wagon). Although the adjective is 'Chinese', most likely the cloth came from Illinois, Missouri, and Kentucky where hemp-based factories were located in the mid 1800s. If it did come from China it would have been what was called 'grass cloth', a plain weave flax fabric also called Canton linen or Chinese linen. Because of the more generic expression, it was most likely an American product as described above.

www.hort.purdue.edu/newcrop/ncnu02/v5-284.html

http://ses.wsu.edu/wp-content/uploads/2015/02/WP2014-10.pdf

Dr. Isabel B. Wingate, *Fairchild's Dictionary of Textiles*, sixth edition, (New York: Fairchild Publications, 1979)

Chiffon: The word, first used in 1775, comes from the French *Chiffe* meaning rag or cloth. It is a plain-woven lightweight sheer fabric made from highly twisted filament yarns (in this case cotton). It was used to make dresses, scarves, and sarees. **(See Chiffon Silk Below)**

www.merriam-webster.com/dictionary/chiffon

www.utsavpedia.com/textiles/chiffon/

http://weddingparty2012.blogspot.com/2011/12/history-of-chiffon-fabric.html

Chiffon (Silk): In 1838, after an initial failed raw silk enterprise, the Cheney brothers built the Mt. Nebo Silk Manufacturing Co. in Manchester, Connecticut. In 1847, they created the first silk thread making machine. In 1854, they changed their name to The Cheney Brothers Silk Manufacturing Co. and in 1873 to The Cheney Brothers. It became the nation's largest silk mill by 1890. This product could have been shipped after 1838 from the Cheney mill or from Patterson, NJ after 1875.

http://connecticuthistory.org/the-cheney-brothers-rise-in-the-silk-industry/

http://archives.lib.uconn.edu/islandora/object/20002:860133921 http://weddingparty2012.blogspot.com/2011/12/history-of-chiffon-fabric.html

https://archive.org/stream/storyofsilkchene00manc/storyofsilkchene00manc_djvu.txt

www.patersonnj.gov/department/division.php?structureid=68

Cotton Fabric With Hair On One Side: (*Tela de Algodón con pelo Por una cara*): Although at first sight, this product seemed illogical, an investigation of the various types of cotton products discovered a fabric called 'moleskin' (fustian fabric). Fustian fabric from the old French *fustaigne*. Moleskin is a medium to heavy-weight, firm cotton fabric that goes back to Medieval times. One side is soft nap while the other side has a brushed nap (felt feeling) making it a sturdy fabric for the construction of trousers, jackets, vests, and skirts that could withstand cold, wet, and wind. This is most likely the product that went to Santa fe. Prior to the 1840s, it would have been imported from the Lancashire/ Manchester textile region of England. Thereafter it could have come from a number of American producers. Orvis, Land's End, Filson, and Barbour still use this fabric in some of their products. (See www.heddels below)

www.memidex.com/fustians+fabric

http://clothes-press.net/different-fabric-types/cottons

www.heddels.com/2015/04/digging-moleskin-textile-tales/

Florence M. Montgomery, *Textiles in America:1650-1870*, (New York: W.W Norton and Co.1984)

Cotton Cloth (Coarse): **(See Cotton Above)**

Chintz: The word comes from the Hindu language *chhint*- derived from the ancient Sanskrit *chitra* meaning spotted bright. Chintz is the plural use. Prior to 1700, this fabric, sometimes interchanged with calico, was hand painted or block printed in India. Due to trade, samples were sent westward- eventually being reproduced by French, English, Dutch, and Portuguese workers. The negative effects on other textile trades resulted in restrictions and import prohibitions but they proved futile as imports and production expanded.

American 'print' production was expanded with the development of the rollers which could print two colors. By 1840, three color rollers were in use. A 'full chintz' contained five colors. After 1840, American sales largely replaced English sales. As a result of the flooded market of poorer and more 'cheaply' made English chintz, the fabrics were referred to as 'chintzy'.

www.antiquequiltdating.com/The_Pat_L._Nickols_Collection_II_c._1840.html

http://fashion-history.lovetoknow.com/fabrics-fibers/chintz

http://blog.andoverfabrics.com/2016/07/andover-textile-history-notes-chintz/

Cotton Baize:**(See Also Baize with Velvet Finish Above)**

Crepe from León (Lyon, France): Crepe is an alteration of the French word *crespe* from *crespe* (curly) first used in 1633. It is a lightweight plan woven crinkled fabric made from silk or wool fibers. Lyon was the silk manufacturing center for France and crepe was a fabric in demand. Official 'court mournings' in the 17th and 18th centuries put great strain on both the demand for silk crepe and the regular production of colored fabric and clothing.

Long mourning periods reduced the demand for regular fabric and clothing. Fashions that were already created sat on shelves or in warehouses. In 1826, the firms of Hinde, Hardy, Grout, Bayliss, and Courtauld of the Norwich and Essex areas held a monopoly on crepe in England. Although there were many silk manufacturers in Lyon, the leading manufacturers of crepe in Lyon around 1820 were Alexandre Giraud and Co., Michael Ladicchere Boisson and Cie, and G. Digonnet. The crepe fabric going to Santa Fe could have originally come from any of the above. There were other uses for crepe other than mourning.

www.merriam-webster.com/dictionary/crepe

www.fabric.com/apparel-fashion-fabric.aspx?fabric-type=crepe

www.buzzle.com/articles/what-is-crepe-fabric.html

http://fashion-history.lovetoknow.com/fabrics-fibers/crepe-fabric

Taylor, Lou. *Mourning Dress: A Costume and Social History* (Rutledge Revivals, 2009)

India's Industry and Power, Vol 19, 1921. Accessed in https://books.google.com/books?id=35o7AQAAMAAJ&dq=lyon+crepe+fabric+factories&source=gbs_navlinks_s

Curtain Lace: Lace is a decorative openwork fabric first developed in the 1400s. The open spaces (negative space) are as important as the solid areas. It involved cutting out a design in a solid woven cloth and then securing the cur edges with thread. Over time, many forms of lace were created (embroidered, needle-made, bobbin, knotted, knitted, crocheted, woven, machine, and mixed). Italy was the first leader in lace (silk) followed by France.

In the 1700s, lace making developed throughout Great Britain with a major center in the East Midlands (one of England's nine regions located north and west of East Angelica). John Heathcoat, a former framework knitting apprentice invented (1809) a machine that could make a copy of the Midland laces. His machine lead to other machines that could produce various types of lace including curtain lace. In 1832, William White's History, Gazetteer, and Directory of Nottinghamshire listed numerous lace makers in the area. Lace curtains were not made in the United States until the late 19th century. **(See Lace and Laces for Cloaks and Capes Below)**

www.powerhousemuseum.com/pdf/research/classification.pdf

www.metmuseum.org/toah/hd/txt_l/hd_txt_l.htm

www.dressandtextilespecialists.org.uk/wp-content/uploads/2015/04/Lace-Booklet.pdf

www.jeanleader.net/lacestyles/britain.html

www.knittingtogether.org.uk/behind-the-scenes/the-people/john-heathcoat-1783-1861/

www.designsponge.com/2011/03/past-present-history-of-curtains.html

www.oldhouseonline.com/articles/a-designers-guide-to-lace-curtains

www.williams.gen.nz/hosiery.html

http://specialcollections.le.ac.uk/cdm/ref/collection/p16445coll4/id/112396

Damask: Damask is a firm lustrous fabric (as of linen, cotton, silk, or rayon) made with flat patterns in a satin weave on a plain-woven ground. Its silk origin was most likely China. Later it was introduced via the Silk Road' to Damascus (Syria) and subsequently on to Europe . Marco Polo described it in the 1200s. Prior to the invention of the Jacquard loom (1801), which made damask production more affordable, it was hand-woven throughout Europe and used primarily by the aristocracy, clergy, or upper class. Damask was also used for wall coverings.

Given early 19th century political issues in France, the damask that went to Santa Fe was most likely for clothing and was made in Great Britain and possibly northeastern United States. Dunfirmline, Scotland, was a noted center for hand woven damask and began to make machine made damask after 1835. The large St Leonard's Power Loom Factory was opened by Messrs Erskine Beveridge & Co. in

1851. The power loom was not introduced into Irish damask manufacturing until after 1840.

www.merriam-webster.com/dictionary/damask

http://www.textileglossary.com/terms/damask.html

https://archive.org/stream/historyofworsted00jame/historyofworsted00jame_djvu.txt

www.periodhomeandgarden.com/damask-fabric/

http://talltalesfromthetrees.blogspot.com/2012/03/john-templeman-1782-1867- and.html

https://startupfashion.com/fashion-archives-history-damask/

www.electricscotland.com/history/industrial/industry10.htm

Denim: Denim is a sturdy cotton twill fabric, typically blue, used for jeans, overalls, and other clothing. It got its name from Nîmes, a city in France famous for textiles. It was originally called serge de Nîmes. The expression 'jeans' also comes from French term Gènes used to describe the Italian town (Genoa) where the fabric was supposedly created in the 1700s. The term 'dungaree' came from the port town Dungri near present day Mumbai (Bombay). Although it is a variation of the term denim, dungri, as contrasted to denim was a pre-colored yarn.

Denim was manufactured in England in the 1700s and in America. In 1789, the term denim was used in a Rhode Island newspaper. John Hargrove of Hartford County Maryland wrote about it and included sketches of the weaving method in *The Weavers Draft Book and Clothiers Assistant* (1792). Denim was the fabric of the working person. This fabric most likely came from England before 1840, and later from the Amoskeag Denim Mills in Manchester, New Hampshire.

www.merriam-webster.com/dictionary/denim

www.reference.com/history/denim-invented-b5784dbcd4a29d18#

http://historybuff.com/history-denim-1-v7grDY59DyZp

A SHORT HISTORY OF DENIM ©2014 Lynn Downey Levi Strauss & Co. Historian, http://www.levistrauss.com/wp-content/uploads/2014/01/A-Short-History-of-Denim2.pdf

The Weavers Draft Book and Clothiers Assistant (1792) http://phw02.newsbank.com.ezproxy2.library.colostate.edu:2048/cache/evans/fullsize/ra_0FCDE01E2B403078_1_29.pdf www.heddels.com/2014/07/rise-fall-amoskeag-denim-mills/

https://archive.org/stream/amoskeagmanufac00browgoog/amoskeagmanufac00browgoog_djvu.txt

Devil's Hide Cloth: (*piel del diablo*): This was a difficult item to address. In **Fairchild's Dictionary of Textiles**, there are two references to 'devil'- 'Devil's Cotton' and 'Devil's Nettle'. Devil's Cotton refers to 'Abroma', a strong lustrous clean white fiber from India that was used for cordage. It was also called India hemp. **(See Hemp Above).** 'Devil's Nettle' referred to *laportea crenulata*, a species of an Indian nettle plant used for cordage or course cloth.

Dr. Isabel B. Wingate, *Fairchild's Dictionary of Textiles*, sixth edition, (New York: Fairchild Publications, 1979)

Dimity Corded Cotton: The term has its origin in Middle Greek *dimitos* meaning 'double thread'. It evolved to Medieval Latin *dimitum*, and Middle English *demyt*. Its first use in western Europe was in 1570. The adjective 'corded' refers to fabrics with a lengthwise 'rib' which is the important feature running warpwise through the cloth. Dimity was used to make women's and children's summer dresses and after 1840 corsets and petticoats. The production of this fabric would logically have been produced in the same British and American mills discussed above.

www.merriam-webster.com

www.fabricdictionary.com/corded-fabric/117/corded-fabric.html

http://belovedlinens.net/fabrics/dimity.php

http://historicalsewing.com/original-1840s-corded-petticoat

Facing: This is a piece of material that is sown to a garment's edge and then turned inside thus creating a smooth edge without visible stitch marks. They can provide greater structure for the garment and support for outer layers of the garment. Interfacing, another type of facing, is a fabric sewn in between the layers of garments to provide greater structure.

www.craftsy.com/blog/2016/09/bias-binding-vs-facing/

www.diceyhome.free-online.co.uk/KatePages/Learning/Useful-sewing-terms.htm

Edging: Edging is both a noun and a verb. It is the material used and the process by which that material is added on (sown) to an end of a construction to create an effect. It could be sewn onto the bottom (hem) of dresses, end of sleeves, on pockets, or around a collar. This product was made from a number of fibers (primarily cotton) and would have been manufactured in continental Europe, England, or the American east coast.

https://janeaustensworld.wordpress.com/tag/regency-fabrics/

Flounce: Flounce is a strip of fabric attached by one edge. It is also a wide ruffle or pleat gathered and attached at one edge. The term first appeared in 1713. The term comes from the Middle English *pleat*, and from Old French *fronce*. The idea behind its use was to create an illusion of bulk with less fabric. It is an edging material sewn to the main body to create the pleat and 'bulk'. The effect is not the same as a ruffle which gathers at the top and carries down through the entire length. The 'flounce effect' is smooth at the top and fuller and wider at the bottom.

www.merriam-webster.com

http://www.thefreedictionary.com/flounce

ttps://oliverands.com/community/blog/2013/03/flounce-vs-ruffle.html

Fine Woolen Fabric (Fluff): Woolen 'fluff', loose down like woolen fiber is not the same as 'batting' which is woolen fibers wadded into sheets. Fluff was used for quilt making, stuffing a top mattress, and as a filler for clothing, bed coverlets, and bonnets. This product would have come from any number of places that produced wool fiber products.

www.metmuseum.org/toah/hd/amqc/hd_amqc.htm

www.pdclean.org/notebook/Batting%20%20Fiberfill.pdf

www.bonnets.com/bonnet.html

Florentine Fabric: Italy was a major textile producer well before the 17th century. During the first half of the 19th century the primary fabric from Florence was silk prints. That said, the fabric going to Santa Fe was most logically a British manufactured fabric named Florentine. It was a light weight silk taffeta **(See Taffeta Below)** of inferior quality. It was originally made in Florence, Italy and imported by the French under the name *Taffeta de Florence*. France later manufactured it at Lyon in the 1700s.

www.metmuseum.org/toah/hd/velv/hd_velv.htm

http://e-archivo.uc3m.es/bitstream/handle/10016/16820/wp13-02.pdf?sequence=1

Dr. Isabel B. Wingate, *Fairchild's Dictionary of Textiles*, sixth edition, (New York: Fairchild Publications, 1979)

Fringe: This item is an ornamental border of short and or twisted threads (textile) or strips which hang from an edge of something (clothing, hat, wagon).

www.merriam-webster.com/dictionary/fringe

Gallon Braid: (*Galon* and *Gallon de Lino*): This item presented a challenge regarding translation and usage. Both terms have to do with braid. A search for 'gallon braid fabric' resulted in definitions related to 'galloon'. The historical origin of 'galloon' is *galon*- from the old French *galonner* (to decorate hair with ribbons).

Given the definitions for 'galloon' as braided trimming with bullion thread, used on men's coats in the eighteenth century, on women's apparel in the nineteenth century, and on such furnishings as draperies or cushions, or a narrow tape-like ornamental fabric used for binding hats, shoes, etc., or originally worsted lace, especially a closely woven lace like a narrow ribbon or tape for binding, it is most likely that the listed item was using the French term *galon*.

Trenza de galón is translated as 'galloon braid'. The term passementerie (ornamental edging or trim from cord, gimp, beading, or metallic thread) coming from the French *passement* ornamental braid, from *passer* describes products associated with both fringe and gallon braid.

For contemporary examples see: http://shop.farmhousefabrics.com/stores_app/Browse_dept_items.asp?Shopper_id=9867810647269867&Store_id=198&Page_id=17&categ_id=432

These items could have come from a number of companies in both Europe and the United States (new England)

www.wordnik.com/words/galloon

Karla J. Nielson, *Interior Textiles: fabrics, Application, and Historic Style*, (Hoboken, NJ: J Wiley and Sons, Inc.,2007) https://books.google.com/books?id=1wRk1gaOK0QC&pg=PA82&lpg=PA82&dq=Galloon+Braid+fabric&source=bl&ots=gYDvDnIpiH&sig=5aIbNxDIZl05q6gLeB3E0_JX1E&hl=en&sa=X&ved=0ahUKEwi714Hzxp_SAhVKVWMKHXq2DeQQ6AE ITjAN#v=onepage&q=Galloon%20Braid%20fabric&f=false

http://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=1544&context=tsaconf

Gingham: Gingham is a plain woven dyed cotton that can come with a checkered or striped pattern. It comes from the Malayan word *genggang*, meaning "striped". The Dutch who developed colonies in Indonesia and the Malaysian Peninsula adopted the name which became 'gingham'.

Gingham was first commercially produced in the Manchester area of England in the late 18th century. There was some small lot production in the United States in 1848 at the Lancaster Mill in Clinton, Massachusetts but most gingham going to Santa Fe before 1848 came from England.

Philadelphia, a major textile center, produced gingham at the Gloucester Gingham Mills after 1860 and the Amoskeag Manufacturing Company in Manchester, New Hampshire, was a major producer of gingham after 1865.

> www.merriam-webster.com/dictionary/gingham
>
> http://visforvintage.net/2012/09/11/gingham-fabric/
>
> http://darkoh.net/gingham-everlasting-success-story/
>
> www.gq.com/story/dropping-knowledge-gingham
>
> http://thehistoryteller.com/2011/reports/the-cotton-king/
>
> Paul E. Rivard, *A New Order of Things: How the Textile Industry Transformed New England* (Hanover, NH: University Press of New England, 2002)
>
> http://ocp.hul.harvard.edu/immigration/amoskeag.html

Hamburg Fabric: (*amburgo*) This was another very difficult item to research. After careful consideration and translation checks, this could be one of two different products. As listed it could be fabric associated with the city of Hamburg, Germany. In *Fairchild's Dictionary of Textiles*, there are four separate 'Hamburg' listings (Edgings, Lace, Point, and Wool).

Hamburg edgings was a trade name for an embroidered product made in Switzerland and exported through Hamburg to the United States after 1835. Hamburg lace was an embroidered product originating in Hamburg. Hamburg Point (silk) was an embroidered product. Hamburg wool was a lustrous fine worsted embroidery yarn sold in different colors.

There is also a listing in the same dictionary for 'amburgos' which is described as heavily filled white shirtings made in England. I cannot offer a definitive answer as to what went to Santa Fe.

> Dr. Isabel B. Wingate, *Fairchild's Dictionary of Textiles*, sixth edition, (New York: Fairchild Publications, 1979)

Hemp Cloth (See Hemp Above, Also Chinese Hemp Above)

Indonesian (Chinese) Silk: The first mention of silk in Southeast Asia was made in a Song Dynasty report in 992 CE. It mentioned the people of Java and the silk tribute sent back to the Emperor. But the origin of the silk is debated. It may have been indigenous or brought in from China earlier. The existence of silk in Indonesia is recorded from that time on.

The area of Aceh (northwest tip of Sumatra) was well know for a rich red silk used for saris, ankle length pants, and wraps. What may have gone to Santa Fe was an Indonesian fabric called *ikat*- an Indonesian term from the Malay *mengikat* (to bind). Although this term was not used in the west until the 20th century, the fabric was well known as *chiné* or *chiné a la branche* which was popular until the 1790s and then fell out of use until a resurgence in the 1840s. *Ikat* is the method by which fabric woven from yarns are pre-dyed, using a resist technique in order to produce a blurred pattern after the weaving.

> http://www.academia.edu/25810727/Silk_in_Indonesia_Its_History_Ancient_and _Current_Silk_Textiles
>
> www.dictionary.com/browse/ikat
>
> www.fibre2fashion.com/industry-article/4297/ikat-weaving?page=1
>
> http://thedreamstress.com/2013/07/terminology-what-are-ikat-abr-and-chine/

Iridescent: this is an adjective/noun that describes a fabric which gives off a color effect (iridescence) by weaving warp ends of one color with a weft of another color. It is also called 'shot cloth'. As the person moves, light seems to change the color of the fabric. The fabric going to Santa Fe was most likely a fabric called shot silk/ tafetta. **(See Taffeta Below)**

> www.duralee.com/Fabric-Glossary.htm
>
> www.collinsdictionary.com/us/dictionary/english/shot-silk
>
> Dr. Isabel B. Wingate, *Fairchild's Dictionary of Textiles*, sixth edition, (New York: Fairchild Publications, 1979)

Lace: (Laces for Cloaks and Capes) (See Also Curtain Lace Above) In the early 1820s, the Massachusetts firm of Dean Walker and Co. was reputed to have lace as good as any from Europe. And a New York company called Medway Lace was also noted for quality lace.

Wass, Ann Buermann and Fandrich, Michelle Webb, *Clothing Through American History: The Federalist Ear through Antebellum, 1786-1860,* (ABC-CLIO, LLC, Santa Barbara, CA, 2010)

Lattice (*rejilla*): Although this is translated as 'rack', one possibility is that it was *tejido de rejilla*- a mesh like fabric. Another is that it could have been a 'ladder-like' lace trim.

Dr. Isabel B. Wingate, *Fairchild's Dictionary of Textiles*, sixth edition, (New York: Fairchild Publications, 1979)

Lawn Fabric (Plain) and Lawn Fabric (Embroidered): This fabric was a plain weave sheer linen fabric through which diffused light could come. It was made from very fine (thin) high thread count carded (prepared with a brush) yarns. It was made with an even weave using even yarns to produce a smooth, non-textured surface.

The term may come from the city Laon, northeast of Paris and 60 miles from the Belgium border. a major producer of linen lawn. Ireland produced a linen product called Irish Lawn. Lawn fabric was used for blouses, shirtwaists, handkerchiefs, women's dresses, pajamas, and underwear. Lawn could also have been produced from cotton fiber (Batiste or nainsook). Given the generic nature of this product it could have come from France, The UK, or New England and the east coast of the United States.

http://thedreamstress.com/2010/07/voile-lawn-muslin-whats-the-difference-the-long-answer/

http://ludlowquiltandsew.co.uk/2014/01/fabric-types-what-is-cotton-lawn/

Phyllis G Tortora, Ingrid Johnson, and Robert Merkel, *Fairchild Books Dictionary of Textiles*, (New York, NY: Fairchild Publishing, 2017)

http://historicalsewing.com/fabric-choices-for-19th-c-costumes-part3-cotton

Lawn Fabric with Spark: **?**

Light Wool Fabric: (See Wool Above)

Linen Braid: Most likely this item was a British product. It is described as a double- cloth having a design created by interchanging yarns of different colors- giving it the appearance of a braid.

Dr. Isabel B. Wingate, *Fairchild's Dictionary of Textiles*, sixth edition, (New York: Fairchild Publications, 1979)

Linen Cloth (See Flax Above)

Linen (Fine) (See Flax Above)

Mahon (Including English Mahon): In the list of fabrics going to Santa Fe two items are listed as *Mahon* and *Mahon de Inglaterra*. *Mahon* is Spanish for Nankeen and subsequently *Mahon de Inglaterra* (English Nankeen). Because they were separately listed they were different products.

Nankeen fabric is a type of yellowish cloth originally made from a natural yellowish cotton fiber in China (Nanjing, Nankin, Nanking). It was originally a dense unrefined hand woven cotton used primarily by Chinese peasants but an acquired taste for the British upper class. Eventually it became known as blue calico in England and a material staple for the construction of men's 'breeches' and 'pantaloons'. **(See Calico Above)**.

www.memidex.com/nankin+fabric

www.dictionary.com/browse/nankeen

www.wisegeek.com/what-is-nankeen.htm

www.tokyojinja.com/2013/03/13/luru-home-keeping-the-folk-art-of-chinese-nankeen-alive-and-a-giveaway/

Organdy: This fabric is a very fine transparent muslin (cotton) with a stiff finish. From the French *organdi* its first known use was in 1757. Its yarn was combed rather than carded. It was treated with three different processes to produce varying degrees of crispness and sheerness. The product 'organza' is a silk creation. Matelasse organdy was a permanently crisp but crinkled finish. It was used for overlays of garments, dresses, collars, petticoats, puffed sleeves, and curtains. The product going to Santa Fe could have been any of the above.

www.merriam-webster.com/dictionary/organdy

http://thedreamstress.com/research/the-great-historical-fashion-and-textile-glossary/

http://historicalsewing.com/the-costumers-dream-fabric

http://library.samford.edu/digitallibrary/pamphlets/cod-000915.pdf

www.textilesindepth.com/organdy-fabric/

Ornamental Cords: (See Fringes Above)

Percale: This was originally a cotton product whose name may come from the Persian term *pargalah*, meaning rag. The fabric was actually a very fine cotton fabric woven on looms in India and exported. The weave feels the same on both sides and the tighter the weave the softer. The minimum thread count to qualify as a percale is 150 but counts go much higher today- giving it a more lustrous look like satin.

In the late 18th and the 19th centuries, the cotton was imported from India and America and the fabric sold back to the United States until American producer Wamsutta (New Bedford, MA) first produced it after 1875.

> www.overstock.com/guides/percale-sheets-fact-sheet
>
> www.kingofcotton.com/article.php/10/cotton_facts
>
> www.maggiemayfashions.com/regency.html
>
> http://capeandislands.org/post/new-bedfords-textile-mills-relics-industry-flourishedthen-faded-history#stream/0
>
> Paul E. Rivard, *A New Order of Things: How the Textile Industry Transformed New England*, (Hanover, NH: University Press of New England,2002)

Pittsburgh Corduroy: Corduroy is a very durable pile fabric (usually cotton) with vertical ribs called 'wales'. Although the fabric existed for hundreds of years and the origin of the word is not precise, the actual word first appeared in 1854. The weave from which it evolved was known as 'fustian' **(See Cotton Fabric With Hair on One Side Above)**.

The tufted velvety texture was developed in the East (Egypt) and later sent throughout Europe. It was an important outdoor use fabric of royalty and the wealthy between the 15th and 18th centuries. By the early 19th century, it was used for urban working clothing in England and then popularized in America. By 1840, it was produced in both Europe and America.

> www.merriam-webster.com/dictionary/corduroy
>
> http://magazine.brooksbrothers.com/cloth-kings/
>
> http://socialarchive.iath.virginia.edu/ark:/99166/w6907b46
>
> http://visforvintage.net/2012/05/03/history-of-corduroy/

Plush: From the French *peluche*, and Latin *pilus* (hair), this material (cotton, wool) was tightly woven with a pile higher than velvet. It was sometimes double faced and then one side was sheared giving it a very soft (*peluche*) feeling. This material was used for apparel, draperies, carpets and upholstery. A plush velveteen was made from cotton and had a longer pile. **(See Velveteen Below**).

> www.fabric.com/SitePages/Glossary.aspx#P
>
> www.merriam-webster.com/dictionary/plush
>
> David Jenkins (ed), *The Cambridge History of Western Textiles II* (Cambridge, UK**:** Cambridge University Press, **,** 2003
>
> Dr. Isabel B. Wingate, *Fairchild's Dictionary of Textiles*, sixth edition, (New York: Fairchild Publications, 1979)

Pontevi: (*pontivi) Fairchild's Dictionary of Textiles* lists 'pontivy' as an obsolete French linen shirt that was maked with varying grades of linen**.** *In Saints and Citizens: Indigenous Histories of Colonial Missions and Mexican California* (2014), reference is made to pontivy- French linen shirts. Another mention of the fabric is made in an 1816 Mexican novel *The Mangy Parrot: The Life and Times of Periquillo Sarnieto.* In *The Mobius Strip: A Spatial History of Colonial Society in Guerreo, Mexico***, (2005)** pontivy cloth is listed. Most likely this product came in via Mexico.

> Lisbeth Haas, *In Saints and Citizens: Indigenous Histories of Colonial Missions and Mexican California* (Berkeley, California: University of California Press, 2014 : https://books.google.com/books?id=Qaa4AQAAQBAJ&pg=PA59&lpg=PA59&dq=pontivy+linen+shirt&source=bl&ots=5g_2X35md0&sig=Q4jbaBumVFqyfNLXx7 EYNYQD2os&hl=en&sa=X&ved=0ahUKEwik--aO4KnSAhVU7GMKHRWUCOEQ6AEIUjAJ#v=onepage&q=pontivy%20linen%20shirt&f=false
>
> "The Mangy Parrot: The Life and Times of Periquillo Sarnieto". accessed from https://books.google.com/books?id=v58tAwAAQBAJ&pg=PA277&lpg=PA277&dq=pontivy+linen+shirt&source=bl&ots=uI0FWI62rH&sig=i1NBsE7z1Ih3lEwm3M-ReTt_1qk&hl=en&sa=X&ved=0ahUKEwik--aO4KnSAhVU7GMKHRWUCOEQ6AEIOTAD#v=onepage&q=pontivy%20linen%20shirt&f=false
>
> Jonathan D. Amith *The Mobius Strip: A Spatial History of Colonial Society in Guerreo, Mexico* (Stanford, CA: Stanford University Press, 2005)

Punto and Puntilla: Punto comes from the Italian for 'stitch'- especially to describe laces in the 1500s. It also applies to Spanish lace. Pontilla is Spanish for narrow lace edging. In *Fairchild's Dictionary of Textiles*, numerous types of 'Punto' are described. These products may have come into Missouri and on to Santa Fe by way of Mexico, New Orleans, or the east coast.

Dr. Isabel B. Wingate, *Fairchild's Dictionary of Textiles*, sixth edition, (New York: Fairchild Publications, 1979)

Red (*escarlata*) Cloth (Common), Red (Scarlet) Cloth (Fine): Scarlet cloth has a long history. Originally it had little to do with the actual color but rather the quality of the finest wool fibers. By the late 18th century, it became more associated with the color. The colored fabric was associated with royalty and the clergy before the 13th century. It was sold and traded in the west before and after 1820. The red dye originally came from 'kermes' (dead insect in Persia), produced from cochineal (dead insect from a Mexican cactus plant), and from 'madder' (plant) which came from what was called 'Turkey Red' (from Turkey). About 40 miles northwest of Oxford, England lies the Cotswolds- a geographic area historically know for it wool and manufacturing. Here the mills produced the red woolen fabric for the British Army. By the mid 1800s, the dye was synthesized. This woolen product that had the property of warmth as well as repelling water. It was popular for making numerous articles including cloaks.

http://historicenterprises.com/index.php?main_page=page&id=2

www.fashion-era.com/Coats_history/cloak_costume_history_1.htm

www.womenofthefurtrade.com/wst_page8.html

Dr. Isabel B. Wingate, *Fairchild's Dictionary of Textiles*, sixth edition, (New York: Fairchild Publications, 1979)

http://the-history-girls.blogspot.com/2017/02/red-all-about-it-bit-of-history-of.html

http://footguards.tripod.com/06ARTICLES/ART31_woolindustry.htm

Ribbons (Silk Ribbon, Small Ribbons for Watches, White Ribbons: Ribbons for all purposes have a long history. French ribbons were woven in Saint-Étienne and Saint-Chamond in the 1300s. French dresses were first trimmed in silk ribbons and bows after 1750. They were used for 'lacing' up the front of a dress (*echelle*) and, as the century moved on, ribbons became widely used as trimmings. In the 1800s, Saint-Étienne, France was the center for ribbon manufacturing-producing woven ribbons in many shapes, sizes, colors, and patterns. Ribbon manufacturing in England was located in Coventry (100 mi NW of London and 20 mi SE of Birmingham) where, after the woolen industry declined, weavers imported French silk ideas. Ribbon manufacturing was successful but declined due to competition and a hesitance to keep up with changes in the industry- evidenced by the fact that steam was not incorporated until after 1850. In the late 19th century, Paterson, New Jersey became known as 'Silk City'. The early mills in the 1840s produced silk products (including ribbon) but did not become well established until after the Civil War. Ribbons that went to Santa Fe most likely came from a number of places. The best quality ribbons came from France.

> http://fashion-history.lovetoknow.com/clothing-closures-embellishments/ribbon
>
> https://19thcswatchbook.wordpress.com/category/original-ribbons/1840/
>
> www.british-history.ac.uk/vch/warks/vol8/pp162-189#h3-0007
>
> Peter Searby, *Weavers and Freemen in Coventry, 1820-1861: Social and Political traditionalism in an Early Victorian Town*, PhD Thesis, University of Warwick, 1972, http://wrap.warwick.ac.uk/3472/
>
> http://patersongreatfalls.org/silkcity.html
>
> Marianne Carlano and Larry Salmon (ed), *French Textiles From the Middle Ages to the Second Empire* (Hartford, Connecticut: Wadsworth Antheneum, 1985), (Avenir Museum of Design and Fashion Colorado State University)
>
> http://files.eric.ed.gov/fulltext/ED477289.pdf

Satin: Originally satin was made from silk and was exported from China in the Middle Ages. It is a smooth, thick, close texture fabric. A satin weave consists of more threads on the warp facing side. Today, satin can be made from a variety of fibers. Satin production expanded from Asia to Europe and North America in the 17th and 18th centuries. Although muslins and cottons were in great use, satin became a popular item in the 1820s and 30s. It was used to make numerous articles of clothing and trims, and for bridal dresses after 1885. Until around the 1820s and 30s, only silk 'yarn dying' was done whereby the yarn was dyed before weaving. Thereafter the technique for piece-dying (the whole cloth was dyed) was developed in France (Lyon area). Satin manufacturing in the United States came after the Civil war and what satins went to Santa Fe were most likely imported from England or France.

> http://fashion-history.lovetoknow.com/fabrics-fibers/satin-weave
>
> Dr. Isabel B. Wingate, *Fairchild's Dictionary of Textiles*, sixth edition, (New York: Fairchild Publications, 1979)
>
> www.silk.org.uk/silk-production.php#silkweaving
>
> www.victoriana.com/Fashion/fashionhistory1825-1840.html

Seersucker: This inexpensive cotton fabric was referred to as *shir o shakar* (milk and sugar) in Hindi (India) and in evidence in Persia. The fabric arrived in Europe by way of Muslim traders. It is light weight, breathable, washable, and doesn't wrinkle. The unique weave creates a 'crinkle' pattern. The claim that Brooks Brothers imported seersucker and made suits for sale in 1830 is not substantiated but for sure the fabric was a post Civil War product.

> www.leaf.tv/articles/how-is-seersucker-fabric-made/
>
> www.brooksbrothers.com/about-us/about-us,default,pg.html
>
> www.apparelsearch.com/definitions/fashion/companies/brooks_brothers.htm
>
> www.gentlemansgazette.com/brooks-brothers-history/
>
> www.neworleansbar.org/uploads/files/ENews07NostalgiaCivilSuits.pdf

Small Cords (See Also Fringe): Cord is created by twisting two or more ply yarns together into a third twist. There are many types of cords- one of which is used for home ornament and another for the embellishment of a uniform. This product could have been manufactured in a number of American locations.

> Dr. Isabel B. Wingate, *Fairchild's Dictionary of Textiles*, sixth edition, (New York: Fairchild Publications, 1979)

Sticky Cotton Lining: ?

Taffeta: This is a lustrous plain-woven fabric that was made from silk and used primarily for women's fashion. The name comes from the Persian *taftah* (very fine plain weave silk fabric), Turkish *tafta*, Old Italian *taffetta*, and Middle English *taffata*. It became popular in the 1840s and 50s. **(See Iridescent Above)**

> www.merriam-webster.com/dictionary/taffeta
>
> http://vintagefashionguild.org/fabric-resource/taffeta/

Velveteen: Velveteen was an imitation velvet fabric. It was a cotton twill or plain weave having a short smooth velvet-like pile. It was not the same as 'velveteen plush'. It was used for making women's, children's, and men's wear, draperies, and bedspreads.

> www.merriam-webster.com/dictionary/velveteen
>
> https://fashionthroughhistory.wordpress.com/2013/11/18/1840s-bonnet-gratetude/

Wingate, Dr. Isabel B., *Fairchild's Dictionary of Textiles*, sixth edition, (New York :Fairchild Publications, 1979)

White Cotton Cloth: (See Cotton Above)

Worsted Woolen Yarn: Worsted yarn is spun from combed wool. This product most likely came from eastern US establishments.

Quilted Fabric (*acolchado*): This item was difficult to determine. The literal translation of *acolchado* is 'padded'. This could mean 'padded fabric' or 'quilted fabric'. This item is possibly a quilted material to be used for making clothing (petticoats, dresses, skirts, linings for coats and jackets, baby outdoor wear)

Averil Colby, *Quilting* (New York: Charles Scribner's and Sons, 1971) Avenir Museum of Design and Fashion (Colorado State University)

CLOTHING

Introduction

The evolution of American apparel (garment, clothing) manufacturing followed a similar technological and geographical evolution as the development of fabrics described above. Enterprises in England and continental Europe first led the way. As the Industrial Revolution expanded across the Atlantic, New England and Middle Atlantic enterprises slowly developed, competed, and later superseded many of their European competitors. Manufacturing expanded from New York, across the state of Pennsylvania to Pittsburgh, down the Ohio River to Cincinnati and Louisville and down the Mississippi to St. Louis. Domestic and foreign apparel was also transported up the Mississippi from New Orleans.

Prior to 1800, buying clothing was a personal, serious, and expensive activity. Ready-made garments were rare. If you were well off and lived in London or a larger city, you went to one of many types of 'drapers'- shops that sold specific fabrics. You might also go to shops that sold trimmings, linings, and sewing materials. To have your garment made, you went to a dress makers or tailors. From Old French comes the word *tailleur* (one who cuts). This person was considered highly skilled. Sewing the 'cut' pieces was considered less skilled. These individuals were called sempters, seamsters, or seamstresses. Apart from these specialists, there were a few 'clothiers' who made ready-made items. If you were not a person of means and or lived away from the city, you purchased your materials from traveling salesmen or peddlers. Because materials were expensive, fabric was recycled into new garments whenever possible.

For the well off, ready-made clothing could be found in specialized areas of England. Hats were made in Manchester and surrounding areas. Leather gloves could be purchased in Worcester, shoes in Somerset, hosiery in Nottingham, and shawls and mittens in Leicester. Cheaper articles of clothing were made in port towns like Bristol, Portsmouth, Liverpool, and London's East End. The working class and the poor bought whatever material they could afford and then made their clothing and recycled the fabric when possible. Second-hand clothes markets also existed.

The American experience was very similar. The retailer sold fabric and the dressmakers and tailors cut and sewed it into clothing. In 1819, a 'clothing store' was first advertised in Boston. These rare stores sold their own ready-made products. They cut the fabrics and then contracted the sewing to individual off- site tailors and seamstresses. As in England, clothing establishments who made and sold cheaper clothing to sailors and working people were called 'slop shops'. They were conveniently located near wharfs.

The first attempt to create 'ready- made ware' came in the 1830s. A former mayor established a ready-made facility in 1831 in New York City. It became known as the John D. Scott Company. Thereafter, several others established manufacturing operations and opened retail stores in the south and west. By 1860, there were more than 300 manufacturers in both New York and Philadelphia.

Manufacturers sent clothing to the West and South by way of the Erie Canal, the Ohio, Mississippi, and Missouri Rivers and by ships to New Orleans by 1840. In 1825, Boston had a ready-made clothing industry of 35 stores. Brooks Brothers got its start in New York City in 1818 and continues to the present. In the 1830s, they made seersucker frock coats and produced the first ready-made men's suits in 1845. In 1837, the C.F. Hathaway Shirt Company was established in Waterville, Maine. Because washing men's shirts was a laborious task, one woman experimented with detaching her husband's collar and separately washing the articles of clothing.

With insight, Ebenezer Brown established what eventually became the Arrow Company when he began to make men's collars in Troy, New York in 1851. John Wanamaker (Philadelphia Department Store) got his start working for the Barclay and Isaac Lippincott Clothing Store in Philadelphia in the 1850s. New York became the center for American clothing in the 1840s. Men's clothing makers were differentiated as 'clothiers' (lower end) and establishments (high end). The term custom was very different from 'ready-made'.

As the population moved westward to Cincinnati and St. Louis, so did clothing manufacturing. Jewish garment makers in Cincinnati established 86 small shops by 1840 and by the end of the 1850s, the expansion of clothing manufacturers made

Cincinnati a clothing center of the Midwest. Reading the commercial sections of *The Saint Louis Weekly Reveille* (1840s) shows that St. Louis companies had large quantities of merchandise for sale.

To identify the specific sources of the articles of clothing below is impossible in most cases. As described above, articles of clothing were primarily handmade until the mid 19th century when the sewing machine and patterns were used. When possible, a description of the product's origin is given.

David R. Meyer "Midwestern Industrialization and the American Manufacturing Belt in the Nineteenth Century." *The Journal of Economic History*, vol. 49, no. 4, 1989, pp. 921–937., www.jstor.org/stable/2122744. (Colorado State University Library)

C. M. Depew (ed*), One Hundred Years of American Commerce: a History of American Commerce by One Hundred Americans*(New York: D. O. Haynes,1895), https://babel.hathitrust.org/cgi/pt?id=uc1.31175035226698;view=1up;seq=13

Claudia Brush Kidwell, and Smithsonian Institution. *Cutting a Fashionable Fit: Dressmakers' Drafting Systems in the United States*. Washington: Smithsonian Institution: for Sale by the Supt. of Docs., U.S. Govt. Print. Off., 1978. Print. Smithsonian Studies in History and Technology; No. 42. (Colorado State University Library)

Jane Tozer and Sarah Levitt*, Fabric of Society: A Century of People and Their Clothes 170-1870* (Wales: Laura Ashley Limited, 1983)

Zukin Sharon, *Point of Purchase: How Shopping Changed American Culture* (New York: Rutledge, 2004)

Harry A. Corbin, *The men's Clothing Industry: Colonial Through Modern Times* (New York: Fairchild Publications, Inc.,1970)

https://markdhogan.wordpress.com/2013/12/04/what-ever-happened-to-hathaway-shirts/

Michael Zakim "Customizing the Industrial Revolution: The Reinvention of Tailoring in the Nineteenth Century." *Winterthur Portfolio*, vol. 33, no. 1, 1998, pp. 41–58., www.jstor.org/stable/1215243. (Colorado State University)

www.americasgreatestbrands.com/volume11/pdf/AGB_Arrow_v11.pdf

www.arrowlife.com/heritage

Pauline Arnold and Percival White*, Clothes and Cloth: America's Apparel Business*, (New York: Holiday House, 1961)

Rebecca Kobrin, *Chosen Capital: The Jewish Encounter with American Capitalism* (New Brunswick, New Jersey: Rutgers University Press, 2012)

www.anb.org/articles/10/10-01706.html

http://lcpdams.librarycompany.org:8881/R/?func=dbin-jump-full&object_id=65784&local_base=GEN01

http://dl.mospace.umsystem.edu/umsl/islandora/object/umsl%3A2467

Bandanas: Too vague for identification of source (**See Handkerchiefs Below)**

Belts: Until the 20th century a belt was not used to hold up pants but rather to close a capote (hooded coat) or coat. Belts were also sold to hold a knife sheath. Civilian belts came in a variety of widths and colors. The Grimsley Company was established by Thornton Grimsley in St. Louis in 1822. The saddlery shop sold belts and other leather goods to the American Fur Company in 1829 and, in 1833, contracted to make Grimsley's Spanish styled 'Dragoon' saddles for Lt. Col. Stephen Kearney. Grimsley products became famous and there is no doubt that many of them went to Santa Fe.

Walter B. Stevens, *St. Louis, The Fourth City 1764-1911* (St. Louis-Chicago: S. J. Clark Publishing CO.,1911)
Louishttps://books.google.com/books?id=wtEyAQAAMAAJ&pg=PA440&lpg=PA440&dq=Grimsley+saddle+shop&source=bl&ots=Q8AM5pgT8A&sig=ZjY8zYF3l6jPmEil2BVeWfsBLYg&hl=en&sa=X&ved=0ahUKEwiSj4m40IvVAhUG3IMKHc1sBagQ6AEIUDAH#v=onepage&q=Grimsley%20saddle%20shop&f=false

www.ushist.com/19th-century_leather_goods.shtml#civilian

www.findagrave.com/cgi-bin/fg.cgi?page=gr&GRid=23216

www.manuellisaparty.com/articles/pfd's/Belts%20%20Sashes.pdf

Belts (Liston Embroidered): This item may have been a sash. (**See Sashes Below**)

Bonnets (Linen): (**See Hats in Personal)**

Booties (Cotton) (Silk): (See Shoes in Personal)

Buttons: Although a few American button makers existed in the 18th century, most buttons were imported from England and France prior to 1776 due to English laws prohibiting the colonial manufacturing of any buttons other than metal. In the early 19th century, England became renowned for button production due to mechanization. However the French firms of Jean-Felix Bapterosse and Albert Parent et Cie were well know manufacturers of utilitarian and luxury buttons well into the century.

The primary mechanical making techniques included the following: 'Cast Molten' (metal poured into a mould, 'Cut Carved' (bone, ivory, shell, wood), 'Drawn' (drawn glass and wire metal), 'Hollow Cast' (face and back cast as one piece around a shank, 'Molded' (glass poured into a mould), 'Processor Molded' (compressed heated ceramic), 'Spun Black Cast (First cast in a mold with eye in place and then lathed to removed mold seams), 'Stamped Metal' (Usually copper or brass alloy, they were stamped from a sheet.). Eventually button manufacturing expanded in Connecticut, Massachusetts, and Pennsylvania.

> Primrose Peacock and Rosemary Godsell, *Discovering Old Buttons* (UK: Shire Publications Ltd, 1978)
>
> www.daacs.org/wp-content/uploads/buttons.pdf
>
> Diana Epstein and Millicent Safro, *Buttons* (New York: Harry N. Abrams, Inc., 1991)

Buttons (Bone/ Horn): These buttons were primarily handmade buttons for peasant clothing. In 1832, a manufacturing technique introduced by T. W. Ingram affected their production. The new process involved boiling the raw horn or bone material to a viscous consistency and press molded it into the final button form. (**See button moulds under Household Items above**). Further improvements occurred in 1837 with the introduction of colored dies to create colorful bone buttons. The most common pressed horn buttons were black and red. Bone buttons went out of style by 1850.

> Primrose Peacock and Rosemary Godsell, *Discovering Old Buttons* (UK: Shire Publications Ltd, 1978)
>
> Marcel, Sarah Elizabeth, "Buttoning Down the Past: A Look at Buttons as Indicators of Chronology and Material Culture" (1994). University of Tennessee Honors Thesis Projects. http://trace.tennessee.edu/utk_chanhonoproj/42
>
> Sally C. Luscomb*, The Collectors Encyclopedia of Buttons* (New York: Crown Publishers, 1967)
>
> www.oldcopper.org/makers/button_makers.php

http://pw1.netcom.com/~jimyce/bm.html (US Manufacturers)

Buttons (Braid): Into the early 1800s these metal covered buttons (woven, knitted, crocheted) were originally called 'passementerie'. Dorsetshire, England was well known for covered buttons. In 1841, linen buttons were machine made and primarily used for underwear. Many types of fabric (including silk) were used to cover the button.

www.abuttonlady.com/fabric-buttons

www.iwantbuttons.com/education/fabrics/fabrics.htm

Buttons (Filigree): This type of button was made from fine wire work and or stamped metal to imitate the wire.

Buttons (Glass): Mass production of glass buttons was located in Bohemia (Czech Rep.) England and France began glass button manufacturing around 1800. European refugees took the art to America in the 1800s.

Primrose Peacock and Rosemary Godsell, *Discovering Old Buttons* (UK: Shire Publications Ltd, 1978)

Buttons (Gold-Plated) (See Buttons Metal Below): Benedict and Burnham (1834-1843) was the predecessor to the Waterbury Button Co. **(See Buttons/ Metal Below)**

www.treasurenet.com/forums/what/188962-need-help-button-design-age-benedict-burnham-button.html

Buttons (Lined): ?

Buttons (Metal): Metal buttons included pewter, lead, steel, silver plate, tin or zinc. The George Armitage Co. (1800-1830s, Philadelphia) is noted for production of metal buttons. Aaron Benedict (Waterbury CT.) began making metal buttons for the American military in 1812. Later it became the Waterbury Button Co. The Scovill Company of Waterbury, CT., made metal buttons including gold ones for General Marquis de Lafayette for his visit to the United States in 1825.

Primrose Peacock and Rosemary Godsell, *Discovering Old Buttons* (UK: Shire Publications Ltd, 1978)

www.relicman.com/buttons/Button9901-Backmark-Armitage.html

www.waterburybutton.com/cart/pc/viewContent.asp?idpage=1 www.treasurenet.com/forums/what/188962-need-help-button-design-age-benedict-burnham-button.html

www.scovill.com/about-us/history/

Buttons (Seashell/ 'Mother of Pearl'): These buttons were first mass produced in Birmingham, England around 1800 and in a few very small shops in America.

Primrose Peacock and Rosemary Godsell, *Discovering Old Buttons* (UK: Shire Publications Ltd, 1978)

Buttons (Silk): (See Buttons Braided Above)

Buttons (Steel/ Tin): (See Burtons Metal Above)

Capes/ Cloaks (Large, Little): Women's hooded and non-hooded cloaks normally hung four to six inches from the ground. Capes were much shorter. Both were made from a variety of materials and would be plain or embellished with trimmings. They both served numerous purposes that included formal wear, protection from elements, and dust when traveling. Cloaks were useful in covering large fuller dresses. Between 1821 and 1860, these items would have first been imported and or purchased from American textile manufacturers in the east and perhaps Cincinnati.

www.ushist.com/ladies_1800s_clothing/lfhp_ladies_capes.shtml

www.fashion-era.com/Coats_history/cloak_costume_history_1.htm

Collars (Light Wool), Collars (Muslin), Women's Knitted: A linen fabric collar up to the chin was built into some shirts as of the 1300s, but the modern collar showed up in the 1400s. Later it evolved into a ruffle like collar with the advent of starch. Nineteenth Century collars were used for both necessity (infrequent bathing and difficulty washing clothing) and beauty. In the 1840s, women and children's collars were worn tightly around the neck and by 1849, were standard fashion with many styles wider than three inches and lying flat of the shoulders. Men's collars were another story (See Clothing Introduction Above). Tiring of washing her husband's shirts, a woman cut off the collars and washed them separately. Her husband and friend began manufacturing them in 1834. The first paper collar (disposable) came into existence in 1853 when Walter Hunt designed a process whereby he cemented two pieces of paper together and made stitch-like marks with a serrated wheel. Because the cement did not hold well, he proposed using a piece of muslin to make the collar more durable and flexible.

http://www.librarycompany.org/HookBook/Section2.pdf http://theshirtcollar.com/the-interesting-history-of-shirt-collars/

https://melmagazine.com/the-history-of-mens-shirt-collars-is-all-about-social-class-and-avoiding-laundry-efe9d1e934d3

www.rootsweb.ancestry.com/~nyrensse/article11.htm

Leander J. Bishop*, A History of American Manufacturers from 1608-1860*, Third Edition, Volume III (New York: Augustus M. Kelly Publishers, 1868,) https://archive.org/details/ahistoryamerica01youngoog

Corsets: Although the origin is unknown, its existence is identified from the 1500s on. Its specific use as an article of clothing dates from the late 1600s. By the early 1800s it evolved when the 'natural' waist was again in style. The corsets were made from linen, cotton, silk, or sateen and given shape by the 'stays' (whalebone, metal or wood). Until 1839, corsets were handmade but thereafter could be made on a loom.

Until the 1840s, a more youthful body could do without one, but the 'fuller' body woman used the newly designed model that allowed for a variety of lacing through the metal grommets. However, by 1850, the corset became a standard article of clothing for all shapes and sizes of women. A new front fastening style allowed women to tighten their own without help.

Elastic like thread allowed for flexibility and 'bust caps' were used. Although corsets were primarily for women, men could also use a cotton corset laced up the back and buckle straps on the side to hold up a stomach. Corsets continued to evolve after 1860, and the types of corsets going to Santa Fe would have varied between 1821 and 1860 and thereafter. They would have been both imported from Europe and procured from American producers.

www.marquise.de/en/themes/korsett/korsett.shtml

http://tahliamckellartextiles.weebly.com/corset-timeline.html

www.vam.ac.uk/content/articles/c/corsets-and-crinolines-in-victorian-fashion/

https://festoonedbutterfly.wordpress.com/2013/07/09/corsets-a-history-lesson-1800s-to-1920s/

Fasteners, Clasps, Hooks, Eyes: These sewing accessories would have come from locations on the east coast, cities along the Ohio and from St. Louis producers.

Frock Coats (Black Merino), Frock Coats (Blue Woolen), Frock Coats (Common), Frock Coats (High Quality), Frock Coats (Woolen): The frock coat first appeared in the early 1800s. It was a full-length coat to the knees (or longer) and open in the front. It would have been worn everyday by a 'gentleman' and for special occasions by the everyday person. 1830s models included a single breasted, three or four button design or a double breasted four or five button model. In the 1850s, the coats had wider lapels and looser, less trimmed, cuts. Some frocks were shortened into what was called a waist coat. One style of frock evolved into formal wear and replaced 'tails' coats. From vintage Santa Fe photos, various styles of frocks were used through the 1890s. Between 1821 and 1860, frocks would have been both imported and manufactured in the United States.

www.ushist.com/19th-century_mens_frock_coat_suit.shtml

www.quartermastershop.com/Civilian%20Clothing/1830_civilian_frockcoat.html#.WWuHNYjyvcc

www.historicalemporium.com/1840-victorian-photo-gallery.php

www.historicalemporium.com/1850-victorian-photo-gallery.php

www.palaceofthegovernors.org/photoarchives.html

Gloves, Gloves (Kid), Gloves (Suede), Gloves (Silk Elbow): There are so many possible origins of the word glove, it must satisfy the reader to say that gloves have been used for fashion, social position or utility for eons. Gloves were important in monastic and church practices (labor, vestments, rituals). They found their way into the legal system as bribes, university gifts to visitors, and in hawking.

Glove making existed throughout Europe. The first important English glove maker was Fownes Brothers and CO. (Worcester,1777). England protected its own manufacturers until 1826 at which time the idea of 'free trade' exposed the glovers to competition. English glovers were not able to competitively respond to the hundreds of thousands of gloves imported from France. By 1840, England's glovers were in a depressed state.

The glove manufacturers of Worcester, England (center for glove making) changed their business philosophy and methods. The best 'kid gloves' (lamb) were still made in France. Kid gloves could also be made from young deer or goats. Suede was different. It is the part (fuzzy) that attaches to the inside of the cow and is the base piece left when the hide is split.

Glove making ('glovers') in America is evidenced in New England and Kingsboro, New York. In 1809 Tallamadge Edwards (a former English leather dresser) moved to Kingsboro and eventually established leather glove manufacturing. Thereafter, numerous glovers were established in the area and in 1853 incorporated into the town of Gloversville, New York. Gloversville became the glove making capital after the Civil War. Prior to 1840, the gloves going to Santa Fe would have come from England or France. Thereafter they could have come from there or the east coast.

S. William Beck, *Gloves, Their Annals and Associations: A Chapter of Trade and Social History* (London: Hamilton, Adams & CO.,1883)

www.fownesbrothers.com/our-history/

www.danielstorto.com/

http://leatherfacts.org/types-of-leather/the-real-deal/what-is-suede

Valerie Cummings*, Gloves, The Costume Accessories Series*, Dr. Aileen Ribeiro (ed.) (New York, New York: Drama Book Publishers 1982)

Chauncey M. Depew (ed.) One Hundred Years of American Commerce: a History of American Commerce by One Hundred Americans, Greenwood Press, 1968. Colorado State University Storage

http://history.rays-place.com/ny/fult-glove-i.htm

www.fulton.nygenweb.net/history/glove.html

Handkerchiefs (Barege, Cotton, Madras): In the early 1800's, young girls learned to sew by sewing together squares of cloth into handkerchiefs. Crocheted and knitted embellishments could be added and were popular around 1840. The barege handkerchief would have been used more for dress, the cotton for more utilitarian purposes (absorbed moisture), and the madras (cotton, large and printed) for use as a turban.

www.librarycompany.org/HookBook/Section2.pdf

www.merriam-webster.com/dictionary/madras%20handkerchief

Hats: (See Hats in Personal Use)

Kimonos: Two centuries prior to American Admiral Perry's arrival in Japan in the 1850s, Jesuits to Japan recognized the value (comfort and status) of the kimono. The kimono made its way to Europe, where it was incorporated into the art of the Pre-Modern Era (Tissot, Monet, Whistler). Not until after the London Exposition of 1862 and the Philadelphia Centennial Exposition of 1876 did Americans acquire an interest in Japanese items. The kimono was one item that garnered attention because it allowed for freedom of bodily movement. Most likely, kimonos to Santa Fe were sent well after the Civil War.

www.edwardianpromenade.com/fashion/women-of-meiji-japan/

Terry Satsuki Milhaupt, *Kimono: A Modern History* (London: Reaktion Books Limited, 2014) Colorado State University: https://ebookcentral.proquest.com/lib/csu/reader.action?docID=1823224&ppg=141

Petty Coats: During this time period, this product could have come from clothing manufacturers and or retail stores in the east or major cities like Chicago, Cincinnati, or St. Louis.

Sashes (Women's), (Silk), (Waist): Sashes were worn by trappers and traders before they became most popular in women's fashion in the period 1825-1840. Waist sashes were used by women during the Regency Period (1811-1820) in England and thereafter into the Georgian and Victorian era (1830 on). The sashes going to Santa Fe could have been ribbon sashes which were 24"-36" and sown under the bust line ending in hanging ends. The short sash was 6"-18" and sowed the same as the longer sash but with a shorter end. The belt sash was a length of ribbon sowed the same as above but with the addition of a buckle or bow at the center front. Some sashes were used as trim on the dress. In the early years they would have been imported from Europe but later manufactured in the United States.

www.manuellisaparty.com/articles/pfd's/Belts%20%20Sashes.pdf

www.victoriana.com/Fashion/fashionhistory1825-1840.html

https://thequintessentialclothespen.com/2014/02/03/variety-please-regency-ribbon-sashes/

Scarves (Burato), (Colored), (Common Black), (Hand), (Men's Silk), (Neck), (Wool)

Shawls, (Barege), (Gauze), (of Jackson), (Silk): Shawls were worn from the mid to late 1800's. Because women's dresses were full and they could not wear large coats to cover them, shawls were popular. Shawls made of cashmere were imported while those crocheted, knitted, or machine made from other fabrics were made in America.

www.librarycompany.org/HookBook/Section2.pdf

Shirts (Hickory): Hickory is a stripped twill cotton denim woven with brown and white, blue and white, or red and white strips. It would have been used by working men and was durable.

www.cwreenactors.com/forum/archive/index.php/t-27148.html

Shirts (Calico): (**See Calico in Fabric)**

Shoes: Mention of shoemakers in America is found as early as 1629 and thereafter the craft and industry expanded in Massachusetts. The Lynn, Haverhill, and Boston Massachusetts areas gave rise to the American shoe industry as early as mid 1700s.

Prior to 1800, stores in Boston opened branch stores in the south or established relationships with southern shoe enterprises and various types of store keepers (grocery, dry-goods, hardware). Foreign imports from England still existed but tariffs favored American manufacturers. The quality of American shoes improved after the 1837 and 1839 economic downturns when American manufacturers had to make a better product to survive.

In 1845, a rolling machine was invented that flattened out leather- reducing the time from one hour of hammering to one minute. After 1850, machines continued to improve the process and quality. In 1855, a machine could 'split' the leather and in 1857, a machine was developed for cutting. Eventually the sewing machine was adapted to shoemaking.

By 1850, shoe manufacturers were located throughout the northeast and the industry had expanded west. As early as 1790, boot makers were established in Cincinnati and by 1820, both boot and shoemakers were listed in directories. After 1840, German immigrants contributed to the design and process of shoe making. Shoes were also being manufactured in St. Louis.

In the collection of The *Arabia* Steamboat Museum are listed shoes with the maker's mark of the L. Shumway and Son shoe manufacturer in Oxford, Massachusetts. After years of shoemakers and shoemaking partnerships in Oxford, Loriston Shumway established his own firm in 1852. In 1857, he renamed the company L. Shumway and Son. The town of Oxford had many shoe making establishments. By 1856, the Harwood Company produced a heavy pegged lace boot for women. The shoes aboard The Arabia, and any from the Shumway Company that might have gone to Santa Fe, would have been produced between 1852 and 1855. Below is a list of the types of shoes that went to Santa Fe. The specific sources of their origins is too difficult to ascertain.

Shoes (of Barege), **Shoes (of Burato), Shoes (Cashmere)**, **Shoes (Girls Cotton), Shoes (Linen)**, **Shoes (of Macedonia)**, **Shoes (of Valencia), Slippers (Men's)**

Depew, C. M.(ed.), *One Hundred Years of American Commerce: a History of American Commerce by One Hundred Americans* (New York: D.O. Haynes, 1895. *from Boot and Shoe Trade* (p.566) https://babel.hathitrust.org/cgi/pt?id=uc1.31175035226698; view=1up;seq=13

Nancy Rexford*, Women's Shoes in America, 1795-1930* (Kent, Ohio: Kent State University Press, 2000)

https://people.seas.harvard.edu/~jones/mckay/history.html

George F. Daniels, *The History of the Town of Oxford Massachusetts With Genealogies and Notes on Persons and Estates* (Worcester, Massachusetts: Charles Hamilton, 1892. https://books.google.com/books?id=qFEhAQAAIAAJ&pg=PA217&lpg=PA217&dq=shumway+and+son+oxford+shoes&source=bl&ots=XaTCbN976G&sig=tOLIUdl9bQzjhTj0hq07nvFtHA0&hl=en&sa=X&ved=0ahUKEwjlxtSL-cTSAhVI0mMKHcAaCLEQ6AEImgEwAQ#v=onepage&q=shumway%20and%20son%20oxford%20shoes&f=false

Cincinnati Federal Writers (WPA), *They Built a City: 150 Years of Cincinnati* (Cincinnati Post, 1935) https://archive.org/stream/theybuiltcity15000federich/theybuiltcity15000federich_ djvu.txt

Stockings (Cotton, Fine Yarn, Linen): As previously describe, the textile industry, of which knitting was a part, first developed in England and then spread to other countries with the expanding effects of the Industrial Revolution. Initially, stockings were hand knitted. By 1700 a knitting frame was designed but initially discouraged in England for fear of unemployment among the knitters. Over the next hundred years, a knitting industry based on the frame was established in England. Knitting frames were employed in pre-revolutionary Philadelphia (Germantown), Connecticut (Waterbury), and New York. The first successful hosiery factory was located in Norwich, CT., in 1771. Protected English stocking looms, like textile machinery, were duplicated and disseminated to other states. After 1810, Pennsylvania became the knitting center of the United States. However, prior to 1840, most stockings were still imported. A more modern knitting machine was designed and employed in England in 1816 but problems precluded its success. A successful machine was invented and patented by Matthew Townshend in 1849 but challenged by Walter Aiken whose earlier patent succeed in court and went on to be used in the American knitting industry

www.williams.gen.nz/hosiery.html

www.delpstockings.com/sock-history-bits/

Milton N. Grass, *History of Hosiery from the Piloi of Ancient Greece to the Nylons of Modern America* (Fairchild Publications, Inc., 1955)

Louise Wehrle, *Fingers of Steel: Technological Innovation in the United States Knitting Industry 1850-1914* (New York: Garland Publishing, Inc.,1995)

Thomas J. Scharf and Thompson Westcott, *History of Philadelphia 1609-1884* (Philadelphia: L. H. Everts and Co.,1884) https://books.google.com/books?id=8uYkAAAAYAAJ&pg=PA2302-IA12&lpg=PA2302IA12&dq=american+sock+manufacturers+1850&source=bl&ots=6tcjp30rr7&sig=wfahRgE_AiuDMFzjqEjzU94tjbs&hl=en&sa=X&ved=0ahUKEwiihvGvsejTAhUK8mMKHdBGDuoQ6AEIbTAG#v=onepage&q=american%20sock%20manufacturers%201850&f=false

https://katedaviesdesigns.com/2014/05/05/a-brief-history-of-british-socks/

www.guild-mach-knit.org.uk/forms/history_part1.pdf

Suspenders (Elastic) (Regular): Keeping in mind that belts for trousers with loops was a 1920's development, suspenders were the device of choice for holding up pants. Suspenders go back to the 1700s. The French *'bretelles'* (strips of ribbon) and British garters were early types of suspenders. In the 1820s, British 'braces' were first manufactured by Albert Thurston in London. Their production continues today. Ben Franklin (late 1700s) used what was called 'gallowses' (galluses) which were suspenders with a cross over (H) in the back. In the 1850s they were constructed with a Y connection. Suspenders were heading to Santa Fe as early as 1834 and Fort Union after 1851.

www.manuellisaparty.com/articles/pfd's/Belts%20%20Sashes.pdf

www.albertthurston.com/history2.cfm?catid=49

http://content.time.com/time/nation/article/0,8599,2037331,00.html

www.thefreedictionary.com/galluses

Tunic Cuts: A tunic was a piece of clothing that fit over a person's body, reaching below the waist or knees and secured with a belt/sash. It is difficult to say if adults, other than workmen wore them but, boys and girls wore them in the 1840s and 50s.

http://dictionary.cambridge.org/us/dictionary/english/tunic

http://histclo.com/style/skirted/Tunic/nat/us/chron/atc19.html

www.thehenryford.org/collections-and-research/digital-collections/artifact/321026

https://calisphere.org/item/bdf0ea2f2d3af4fedfc72aa0b5ce447a/

Tunic of Cambri,**Tunic (Barege)**, **Tunic (Cotton)**, **Tunic (Calico)**, **Tunic (Muslin)**, **Tunic (Serge)** (**See Tunic Cuts Above)**

Vests (Common): Vests became popular in the 1840s. They were single breasted before 1850 and both single and double breasted after. They may have had a tie or a belt to make a tighter fit. Vests were made with a variety of fabrics and cost.

http://walternelson.com/dr/black-vest

http://vintagedancer.com/victorian/mens-victorian-costumes-clothing-guide/

Vests (Embroidered), **Vests (Quilted), Vests (Low Quality Cashmere)**: (**See Vests Above)**

Veils: There were many types of veils. Ordinary everyday veils were made with a soft tulle net, gauze, or crepe. A crepe veil was hemmed at the top with ribbon. Mourning veils were made from black crepe. Others were made with Chantilly, worked lace, and tulle with ribbon. Riding veils were made with black, brown or green crepe. Ribbon was used for securing the veil to the head.

Workwoman's Guide by a Lady (Piper Publishing, 2002) Accessed from: Avenir Museum of Design and Fashion (Colorado State University)

Veils (Gauze), Veils (Knitted) : (**See Veils Above in Personal**)

Winter Rock Coat of Casineta : *Casineta* is a thin fabric of wool used as a liner.

www.definiciones-de.com/Definicion/de/casineta.php

PERSONAL USE

Beads:

Introduction

The name is derived from the old English word (mid 1300s) *bede* or *gebed* (prayer). Beads were first created as far back as 30,000 BCE. With the evolution of permanent settlements in western and southwest Asia (Mesopotamia, India, Egypt) after 4000 BCE, beads became a means of trade and commerce (currency). Eventually beads (art form and means of trade) expanded throughout antiquity (Phoenicians, Greeks, Romans). The Romans established the great network of trade which included beads.

After the dissolution of the Roman Empire in the 400s CE, bead making was continued and perfected in local areas throughout Europe. Between 1100 and 1650, beads were the subject of travelers' stories, and trade with the East and later with the Americas.

Beads made their way into Europe from India by way of Africa and from China by way of the Silk Road. Glass beads from India were especially prized and later emulated by Venetian glass bead makers. Although beads were not important jewelry items in Europe, glass beads were produced for other uses. Beads were carried westward with Spanish, Portuguese, Dutch, and English sea faring explorers, conquerors, and colonizers. Columbus carried the first glass beads to the Americas. Beads were used in exchange for land and commodities. Bohemian (present day Czech Republic) glass makers learned their trade in Venice and by 1850 were producing more glass beads than Murano (Venice). Beads were sold and or traded in loose form or on what was called 'cards'

Beads going to Santa Fe between 1821 and 1860 would have come down the rivers from Pittsburgh, up the Mississippi from New Orleans, or from Mexico City.

> www.etymonline.com/index.php?term=bead
>
> Lois Sherr Dubin, **The** *History of Bead from 30,000BC to the Present* (New York: Harry N. Abrahams Inc.,1995)
>
> Joan Mowat Erikson, *The Universal Bead* (New York: W.W Norton & Company Inc., 1969)
>
> http://thefurtrapper.com/home/trade-beads/

Bead Necklaces: Too broad for identification of source.

Beaded Handbags for Indian Trade: (See Also Handbags Below) Difficult to specifically determine, these hand bags may have been first knitted and then had the beads attached. As many as 1,000 beads per square inch were common before 1850. Beaded bags or other bags with drawstrings were called 'reticule'. Given the fact that women' dresses did not have pockets, reticules provided a place to carry a number of items. They were knit and made from three horizontal parts. The bottom had a star pattern with an optional tassel. The middle section had a floral or scenic motif, and the top a scalloped or floral border- all of which were attached to a cord, ribbon, or chain that drew the top together.

www.antiquepeek.com/facts_beaded_purses.htm

www.austentation.com/history/reticule.html

Beads (Glass): After the decline of glass bead making in southwest Asia in the late 1300's, Venice became the glass bead maker of the west and shipped product to Africa and Southeast Asia. After 1292, Venetian glass furnaces moved to the nearby islands of Murano. The glass making industry was highly protected by the Venetian government. By 1400, there were 3,000 blowers in Murano.

Glass bead making expanded around Venice and by 1764 more than two million pounds of beads were produced yearly in Venice. Venetian beads traveled with the sea farers noted above. Prior to the arrival of Europeans, indigenous people of the Americas made beads from varieties of materials. Thereafter, explorers, traders, and priests carried glass beads for purposes of ingratiation and trade. Lewis and Clark carried glass beads from Murano and China. The small glass bead ('seed bead') associated with Native American crafts, was introduced in the 1500s and popularized by the fur traders.

An early Venetian glass bead maker Giovanni Giacomuzzi, born in 1817, became one of Italy's most distinguished glass manufacturers. In 1838, he and his father began selling glass beads (seed beads) and necklaces to foreign markets. 3.5 million beads were excavated from the steamboat *Arabia.* Giacomuzzi beads may have been among them but according to excavators Karklins and Henneberg, most likely came from H. Goble Gablonz, Bohemia and Lauscha and Thuringia, Germany.

Moses Lewin Levin of London became an importer of French goods in 1830 and in 1831 became the proprietor of bead and foreign top warehouse. Joined by a relative, they continued the business until 1848 when Ephraim went on his own. Moses continued his import-export bead work and by 1854 included the United States in his sales market.

Stephen Allen Frost (Fort Leavenworth) began peddling beads to the plains Indians in 1848. His business grew with the addition of his son after 1860. Frost's beads came from Venice, Poland, and Bohemia. The possibility exists that his early beads may have made their way indirectly to Santa Fe but, after 1870, beads from the Stephen Frost & Son Company could easily have been sold in Santa Fe.

www.venetianbeadshop.com/History-of-Beads_ep_37-1.html

www.bigbeadlittlebead.com/guides_and_information/history_of_venetian_glass.php

http://thefurtrapper.com/home/trade-beads/

www.africadirect.com/beads/venetian-over-100/10-lewis-and-clark-venetian-trade-beads-african-loose.html

Lois Sherr Dubin, *The History of Bead from 30,000BC to the Present* (New York: Harry N. Abrahams Inc.,1995)

Karlis Karkins*, Glass Beads, The 19th Century Levin Catalogue and Venetian Bead Book and Guide to Glass Beads* (Canada: National Historic Parks and Sites Branch, 1985)
https://peachstatearchaeologicalsociety.org/index.php/13-beads/248-history-of-trade-beads

http://parkscanadahistory.com/series/saah/glassbeads.pdf

Journal of the Society of Bead Researchers Volume 14 (2002) Article 6, Vincenzo Zanet: *A Brief Biography of Giovanni Giacomuzzi: Artist and Glassmaker*
http://surface.syr.edu/cgi/viewcontent.cgi?article=1124&context=beads

Journal of the Society of Bead Researchers Volume 20 (2008) Article 2, Karlis Karkins and David Henneberg , *Beads from the Great White Arabia: A Mid 19th Century American Steamboat*

www.museum.state.il.us/ismdepts/anthro/beads/Stephen Frost_merchant.ht ml

www.thebeadsite.com/12.1.pdf

Beads (Chinese): Although the Chinese were not historically interested in using glass beads, Chinese bluish beads from the Ching Dynasty (1644-1912) were recognized as useful by Spanish missionaries in Africa. These beads were taken to Mexico with the Spanish galleon trade after 1500.

www.thebeadsite.com/be02-ch.htm

http://thefurtrapper.com/home/trade-beads/

www.tradebeads.org/

Beads (Seashell): Originally, shell was used by Native Americans to create 'wampum'- a means of currency and ornament. Wampum became legal tender in Massachusetts in 1641.

Joan Mowat Erikson, *The Universal Bead* (New York: W.W Norton & Company Inc., 1969)

Beads (Crystal): Glass beads were first made in the 1200s in Bohemia, but not until the 1500s did they become well known and produced in the cities of Stanovsko, Jablonec, and Bedrichov. Lead was the ingredient that when added to glass created the 'leaded crystal glass'. George Ravenscroft (Englishman who had connections to Venetian glass) first held the patent (1676), but once it expired others produced the crystal glass and the beads. In Bohemia, glass beads were primarily used for rosaries before 1550. The Industrial Revolution gave rise to a machine that could mass produce glass beads that could be colored.

www.sherichseashells.com/jewelry-facts/history-of-crystal-beads

www.glassmaking-in-london.co.uk/ravenscroft

www.beadedcreations.co.za/the-history-of-crystal-beads

www.bigbeadlittlebead.com/guides_and_information/history_of_czech_glass_beads.php

Beads (Common): This is a vague description but may mean beads made from common materials like wood, metal, or stone

Bells (Little): (See Bells in Household Items)

Brass Plates for Shoes: This item was probably a plate to protect the leather heels of shoes or boots. They looked like a mini horseshoe and were attached to the shoe by small nails or screws. They would have been domestically produced in numerous cities.

www.ushist.com/19th-century_mens_boots_shoes.shtml#item15

Bronze and Steel Buckles: This is somewhat misleading because the history of buckles back to antiquity describes more a device for cinching up equipment or armor. As time went on, buckles became more ornamental and primarily used by the wealthy. In the 1600s, the British created buckles for the army and navy, but not the type we think of today.

The belt buckle we think of today was first developed by the US Military for the Civil War. Cowboys did not use belt buckles until the late 1890s. They wore suspenders. The belt (with holes) and buckle we think of today appeared in the mid 1920s when Levi Strauss made the first pants with loops to hold a belt. The buckles going to Santa Fe before 1860 were likely for tightening up equipment or possibly for the military after 1851. They also would have included decorative buckles for attaching cloth sashes. The bronze and steel buckles would have been cheaper than gilded metals.

www.forttumbleweed.net/beltbucklehistory.html

https://prezi.com/nz0ziapgarml/who-invented-the-buckle/

http://inolacastings.com/120/cowboy-buckle-history

https://truewestmagazine.com/buckles-the-cowboy-calling-card/

Martha Gandy Fales, *Jewelry in America 1600-1900* (London, England: Antique Collectors Club Ltd., 1995)

Brushes (Beard): (See Also Combs/ Brushes Below and Mud Cleaning Brushes in Household Goods)

Brushes (Boot): **(See Also Combs/ Brushes Below**)

Brushes (Clothes) (**See Also Combs/ Brushes Below**)

Brushes (Shaving): (See Also Shaving Equipment Below)

Brushes (Shoe): (See Also Combs/ Brushes Below)

Brushes (Teeth): From Egyptian frayed (shaved) end of twigs to Chinese hog bristles, the tooth brush in one shape, material form or other has been around for thousands of years. French dentistry advocated the use of brushes in the 17th and 18th centuries. Pierre Fauchard (1678 –1761) of France is considered the 'father of modern dentistry'. William Addis of Clerkenwald, England is credited with the mass production of tooth brushes in 1780. American H. N. Wadsworth was issued a patent in 1857, but American brushes were not mass produced until the 1880's. In fact, although brushing was advocated in America as early as 1779, brushes were primarily imported and rarely used until the 20th century.

www.auraortho.com/the-history-of-the-toothbrush/

www.fauchard.org/about-pfa/history/articles

http://dentistfrisco.com/2017/01/19/history-of-the-toothbrush/

https://janeaustensworld.wordpress.com/tag/19th-century-dental-hygiene/

www.virtualdentalmuseum.org/exhibits/different-strokes-different-folks-history-toothbrush/

Chapsticks: (*cerilla para los labios*) Most likely this product is lipstick. Coloring the lips goes back to Mesopotamia (Sumerians/ 3500BCE) and Egypt when women crushed gems stones (carmine) and mixed it with red ochre and wax. Between 700 BCE and 1100, an Arab cosmetologist in Andalusia (Spain) created a solid lipstick that was rolled and pressed. Christianity forbade the coloring of lips until after 1500. Queen Elizabeth used a bright red plant based color mixed with beeswax. In 1770, The British Parliament passed a 'no make-up' law (associated with witches) but flaunted by women. For most of the 1800s, use of lipstick was again the provenance of stage performers and prostitutes. In the 1840s vermillion (**See Vermillion/ Household**) established itself as a lip coloring agent and was sent to Santa Fe. The lipstick we think of today probably did not arrive in Santa Fe until after the Civil War when Guerlain of Paris created a lipstick from grapefruit, butter, and wax.

https://fashionista.com/2016/07/best-red-lipstick-history

www.lipstickhistory.com/

www.stylecraze.com/articles/a-complete-history-of-lipstick/#gref

Combs/ Brushes (Disentangling, Ivory, Pocket, White, Leather, Wooden, Beard): Horn and ivory combs were advertised in American papers in the 1700s. Because they were expensive imports, indigenous horn comb manufacturers appeared. The first (Leominister, MA) was set up by Enoch Noyes in 1759. The technique then, and later, was to trim the ends of a cattle horn, soak it in hot oil, and open it with tongs. After cooling on flat stones, the shape was cut with a saw or jackknife, and the 'comb drums' (teeth) were notched in.

Early comb makers (hornsmiths) also used tortoiseshell and ivory. William Kent established the Kent Brush Company in England in 1777. They made both hair and beard brushes. Ivory comb makers appeared in the Connecticut Valley in the early 1800s when the slave based ivory trade of Zanzibar was available. The leading manufacturer of ivory combs was George Read and Co. who made ivory combs until 1839 when it switched to piano keys. Another manufacturer was Samuel Merritt Comstock in West Centerbrook. In 1854, Hugh Rock filed the earliest U.S. patent for a hairbrush that featured a metal handle with an ornamental design with scalloped edges.

http://colonialquills.blogspot.com/2012/11/colonial-american-hairbrushes-and-combs.html

http://connecticuthistory.org/ivory-cutting-the-rise-and-decline-of-a-connecticut- industry/

https://kentbrushes.com/about

www.gracesguide.co.uk/G._B._Kent_and_Sons

www.courant.com/news/special-reports/hc-newivory1.artsep29-story.html

Winslow and Booth on the Norwalk River.- http://historyofredding.net/HGgilbertbennett.htm

www.collectorsweekly.com/accessories/brushes-and-combs

Earrings: (See Jewelry Below) Regardless of time or cultures, the body has been used to display jewelry. Until 1789, France was the major producer of jewelry in Europe. The Girandole, a curvy, ornate 'candelabra like' earring was very popular. When aristocrats fled the revolution or were executed, the demand for jewelry crashed in France, the traditional guild system was abolished, and the quality of work and availability of gem stones greatly diminished.

Earrings were affected until their design made a comeback after 1795. By the early 1800s, French jewelry was again recognized as the best as a result of Napoleon's interest in French art. After the demise of Napoleon, monarchs were restored and wanted jewelry that emulated the 18th century. The scarcity of gems affected the quality of the earrings on the continent, but in England gem stones were plentiful.

By 1830, longer earrings again became popular as well as a movement toward delicate and lighter works from gold filigree and wire (cannetille). The technique of enameling developed in Northern Italy and Switzerland created a less expensive alternative to gems stones. Spain and Portugal produced earrings using fine gem stones from South America.

In England, the creation of elongated teardrop earrings became popular. Women of modest means could enjoy a *parure*- a set of jewelry that included earrings and a bracelet, necklace or broach. In the late 1840s new hair styles lead to the ears being covered and earrings all but disappeared. At the famous London Exhibition in 1851, earrings were given little notice except for small ones. Later in the decade, when hair began to recede from the face, small earrings and hoops appeared.

http://fashion-history.lovetoknow.com/fashion-accessories/earrings

www.joyjonesjewelry.com/blogs/news/what-the-heck-is-a-girandole www.langantiques.com/university/Cannetille

Daniel Mascetti and Amanda Triossi , *Earrings from Antiquity to the Present* (London: Thames and Hudson Ltd., 1990)

www.collectorsweekly.com/costume-jewelry/parure

www.langantiques.com/university/Romantic_Period_1837-1860

Martha Gandy Fales, *Jewelry in America 1600-1900* (London, England: Antique Collectors Club Ltd., 1995)

Fans: Of all the goods going to Santa Fe, fans were very important to women. Although the utilitarian use and the size of fans declined after 1800, they were still an important accessory to fashion. Fans ranged from simple materials (wood, paper, straw, bamboo, paper maché) to expensive tortoiseshell, ivory, silk, feathers, and sequins.

Fans were historically reserved for the upper class but the expanding middle class increasingly used mass-produced fans. Folding and painted fan are attributed to the Japanese whose fans were brought back to Europe by the Portuguese in 1500's. The Spanish brought back Chinese fans. Fans became part of court fashion and their use expanded throughout Europe.

Most fans going to Santa Fe would have been imported from Japan, China, via Europe. Jennings and Betteridge of Birmingham were well known paper maché fan makers after 1815. The Spanish fan most likely would have been very popular given the destination. In 1867, the Hunt Fan Company in Massachusetts began the mass production of fans.

Fans came in all forms of decoration from plain to highly stylized with lace, painted scenes and artistic embellishments. According to numerous undocumented sources, the use of the fan incorporated non-verbal communication. According to a well written article by a J.P. Ryan in 2004, most likely the many references to 'fan language' are more a collection of repeated rumors, assumptions and hearsay- many of which were published again and again in different forms.

www.fancircleinternational.org/history/fans-in-19th-century-europe/

https://web.ics.purdue.edu/~salvo/@SEA/exhibit/america.asp

www.thefanmuseum.org.uk/fan-history

www.lands-faraway.com/fans-abanicos.html http://articles.chicagotribune.com/1987-07-05/news/8702190283_1_fans-brise- 18th-century

www.fanmakers.com/history/a-short-history-of-hand-held-fans/

Philippe Mesmer, *Fan Tales* (New York: Parkstone Press, 2002)

www.livinglanguage.com/blog/2012/04/03/spanish-hand-fan-abanico/

www.carters.com.au/index.cfm/index/5853-jennens-and-bettridge-papier-mache/

J.P.Ryan, *Fact and Fiction about Fan Language in the 18th Century*, FANA Journal, Spring 2004, pp.11-22 (Acquired from Dr. Abbey Cash, President, Fan Association of North America)

Female Syringes: (See Syringes in Household)

Fine Soaps: (See Also Soap in Household Goods) Soaps were manufactured by many of the same American companies who produced candles. Fine soaps, however, were less common. The English companies of Cleaver and Low were best known for their fine soaps called 'Old Brown Windsor', 'Honey', and 'Glycerin'.

In 1850, Hull Company was the first American manufacturer to make fine soap. A year, later Colgate enter the fine soap market. The process of making fine soap was labor intensive until Colgate initiated the English use of steam. Soaps were liquefied and purified with steam and poured into frames containing perfumes.

Charles W. Parson's , *The Pharmaceutical Era: An Illustrated Semi Monthly Magazine Devoted to the Interests of Pharmaceutical Science and Practice*, Volume V (Detroit and New York: D. O. Haynes and Company, January 1891) https://books.google.com/books?id=MJBMAQAAMAAJ&pg=PA283&lpg=PA283&dq=using+steam+to+make+fine+soap+1850&source=bl&ots=ggtZkKy-4L&sig=dNQhxpzhfDngW3BQjcOuOgsxLGc&hl=en&sa=X&ved=0ahUKEwiN-J6EvtzUAhWmv1QKHc6gB_QQ6AEILDAB#v=onepage&q=using%20steam%20to%20make%20fine%20soap%201850&f=false

Leander J. Bishop, *A History of American Manufacturers from 1608-1860*, Third Edition, 1868, Volume III (New York: Augustus M. Kelly Publishers, New York, 1966.

Fishing Line: (See Fish Hooks and Fishing Line in Tools)

Flasks (Perfume), Flasks (Small Perfume): (See Glassware in Household)

Glasses (Reading): (See Also Tin in Household Category) Prior to the 1830s, glasses were imported from Great Britain but later produced in the United States. In the 18th and 19th centuries they were called spectacles. The term 'eye-glasses' referred to frames that did not have side attachments but rather sat on the nose.

John McAllister from Glasgow, Scotland emigrated to Philadelphia in 1775 and opened a shop selling walking canes in 1783. He added spectacles in 1799. The War of 1812 disrupted his business and he decided to make his own gold and silver frames in 1815. William Beecher began manufacturing spectacles in Southbridge, MA in 1826. His company eventually evolved into The American Optical Company. Between 1833 and 1839 his seven employees were able to make one pair per day per man starting with cutting the metal, filing, soldering, and edging the lenses to fit the frame. By 1852, the company produced 14,919 pairs of gold, silver, and steel spectacles. There were more than 300 frame makers in America by the end of the 1830s.

www.antiquespectacles.com/history/ages/through_the_ages.htm

www.opticalheritagemuseum.org/pdfs/AO%20History%20DianeMatuckArticleForMAOpticians%20Nov%202010.pdf

www.historiceyewearcompany.com/files/HOYFrevisedMcBrayer.pdf

Gold-Plated Bracelets: (See Jewelry Below)

Hairpins: This accessory has been used since ancient times. During Roman history the pin could double as a container containing perfume or poison. Its primary use in Europe and America was to maintain a tidy hair style according to the custom. During the 1600s in France, wigs worn by men required they shave their heads and attach the wigs with pins. There were one point pins and double point pins. Single point pins could be decorated with miniature busts, animals, flowers, or artistic figures.

Both single and double pins were made of wood, bone, and metal. Gold and silver pins were also available to the wealthy. The 'bobby pin' was not created until the turn of the 20th century by the Frenchman Luis Marcus. It was later widely used as more and more women bobbed their hair. Most likely pins sent to Santa Fe in the early years were from Europe. Later they would have included pins from Asian and American manufacturers. Spanish brass hair pins may have come from Spain via Mexico. Hair pins were excavated from the steamboat *Arabia*.

www.hairboutique.com/tips/articles.php?f=tip3600.htm

www.bustle.com/articles/92135-the-history-of-hair-accessories-summed-up-with-the-7-most-important-moments

http://fashion-history.lovetoknow.com/fashion-accessories/hair-accessories-as-fashion-statements

Mrs. A. Walker, *Female Beauty, As Preserved And Improved by Regimen, Cleanliness And Dress: And Especially by the Adaptation, Colour And Arrangement of Dress, As Variously Influencing the Forms, Complexion, And Expression of Each Individual, And Rendering Cosmetic Impositions Unnecessary (*New-York: Scofield and Voorhies, J. & H.G. Langley, 1840) https://hdl.handle.net/2027/nyp.33433006789881?urlappend=%3Bseq=264

http://bethsbobbins.blogspot.com/2015/06/1850s-1860s-hair-dressing-tools.html

Handbags: Women's dresses did not allow for inseam pockets until the late 1800s. Historically, they had to carry their personal possessions in 'pockets' which were made in pairs and tied around the body as part of the undergarments. When the dresses were large, the undergarment pocket was easy to hide but later fashion dictated a different approach.

By 1800, higher waists and the neo-classical look required a carrying bag for a lady's possessions. The 'reticule' was designed. This bag gets its name from the French term reticulé which came from the Latin *reticulum* (net or mesh-like structure). In England it was an 'indispensible'. Over time the reticule (ridicule) evolved into a more elaborate piece of clothing embellished with ribbons and beads and became larger in size. In 1831, *American Girl's Book: Or Occupation for Play Hours*, developed an entire chapter on the reticule. Reticule bags could have come from the east or from Mexico. With the Industrial Age and expanded rail and ship travel, women required larger traveling bags. In the 1840s larger leather hand bags come into existence. Victorian handbags came in many sizes, materials, and costs.

http://vintagedancer.com/victorian/1840-1850s-dickens-victorian-costuming-for-women/

http://thedreamstress.com/2013/11/terminology-what-is-a-reticule-or-indispensable/

http://fiveminutehistory.com/the-history-of-handbags-a-5-minute-guide/

https://regencyredingote.wordpress.com/2009/05/15/the-reticule-or-the-ladys- pocket-exposed/

https://catalog.hathitrust.org/Record/011624110

www.metmuseum.org/art/collection/search/156669

http://info.fabrics.net/please-dont-ridicule-my-reticule-purses-from-clutch-to-lug-2/

Hats (Straw): Women's hat styles changed with their hair styles. During the early 1800s a variety of styles existed as a result of post revolutionary lack of 'rules'. Neo-Classical forms existed along with round straw hats attached to the head by ribbon strings. These hats were called 'gipsy' or witches' hats. Straw bonnets with large forward brims were called 'poke' or 'cottage' style.

Two women are credited with developing the idea, design, and making of these hats. Sybilla Robertson Masters of Pennsylvania, desired to patent a process for straw hats in 1712 but had to travel England for the patent that was granted in 1716 by the King. She stayed in London and opened a shop- later returning to Pennsylvania. In 1809, Mary Dixon Kies of Connecticut became the first woman to receive a US Patent- this one for her improvement in making straw hats using silk or thread.

Straw hats and bonnets going to Santa Fe after 1821 would have come primarily from New England and maybe some from England and France. Massachusetts had dozens of hat makers located in large and small towns. Derry, New Hampshire manufactured straw palm leaf hats. In 1840, a machine was invented to braid straw into a yarn.

Fiona Clark, *Hats*, The Costume Accessories Series, Dr. Aileen Ribero (ed.), (New York: Drama Book Publishers 1982)

Hilda Amphlett, *Hats: A History of Fashion in Headwear* (Buckinghamshire, Great Britain: Richard Sadler Ltd., 1974)

https://thestrawshop.com/inventive-women-of-america/

www.smithsonianmag.com/smart-news/meet-mary-kies-americas-first-woman-become-patent-holder-180959008/?no-ist

http://newenglandtowns.org/new-england-hats

Hats (Other): 'Other' must have meant 'other than straw'. If so, hats were also made of silk rouleaux combined with netted silk cord and silk ribbon. Hats were made with taffeta stretched over wire trimmings., Silk gauze trimmed hats with feathers were also popular.

> Fiona Clark, *Hats*, The Costume Accessories Series, Dr. Aileen Ribero (ed.), (New York: Drama Book Publishers 1982)
>
> www.mimimatthews.com/2015/11/30/the-1830s-in-fashionable-gowns-a-visual-guide-to-the-decade/

Hats Men's (Caps): Other than the top hat which was most popular in the 1840s and 50s, straw hats and soft felt hats were made at this time. These would have been manufactured in the eastern US and shipped to Santa Fe. Panama hats (below) were a special product.

> Fiona Clark, *Hats*, The Costume Accessories Series, Dr. Aileen Ribero (ed.), (New York: Drama Book Publishers 1982)

Hats (Panama): (*gorras de Panamá*) This type of straw hat was seen by the first Spanish conquerors in Ecuador in the 500s. Ecuadorians made these hats in the 1700s and into the mid 1800's. A Spanish military exile Manuel Alfaro fled Spain in 1835 and later established a hat making industry in Ecuador. In the 1840s he established a company in Panama where he sold his hats along with other commodities to people traveling across the Panama isthmus on their way to the California gold fields. By 1850, companies in the US were buying two hundred thousand hats yearly. Alfaro's hats were shown at the Paris Exposition (1855). Napoleon III was given a hat by a friend and the 'Panama' was soon sold throughout France. The possible routes by which these hats made their way to Santa Fe are numerous.

> www.brentblack.com/pages/history.html
>
> https://qz.com/476014/the-finest-panama-hat-in-history-woven-in-a-tiny-ecuadorean-village-may-be-too-valuable-for-anyone-to-wear/
>
> www.npr.org/sections/goatsandsoda/2015/08/08/340682706/hes-just-woven-the-worlds-finest-panama-hat-but-who-will-buy-it

Jewelry: The post American Revolutionary era experienced the opening of new markets and exchange of new design ideas. The Neo-Classical was evident across the culture and no less so than in jewelry. Articles of jewelry became simplified and refined. As the early century evolved, more and more American jewelers were competing with their English and French counterparts and by mid century an American 'style' was in evidence.

If jewelry went to Santa Fe between 1821-1830, it would have come from England (Birmingham, Sheffield) or American jewelers on the east coast. French jewelry was too expensive. Prior to and more so after the American Revolution, European jewelry artists emigrated to America and established business.

The first attempts to establish a jewelry making business were in Philadelphia and New York City in 1784. European interests opened shops in both cities. New York, Providence, Rhode Island, Attleboro, Massachusetts, and Newark, New Jersey became the early jewelry centers of the United States. From these centers and their numerous manufacturers, jewelry was exported west and into the Caribbean. With more and more competition in the early 1800s, jewelers expanded to other states on the east coast and to Ohio and New Orleans.

By 1825, Providence was the premier center for jewelry that included goldsmiths, watch cases, watch makers, lapidary products, diamonds, and pearls. As a result of changes in manufacturing methods (machine stamping, electroplating), in the 1840s and 50s, new and less expensive jewelry pieces became available. Small pearls were used in neo-classical design. They were imported from India and China and would have been imported by east coast jewelry establishments.

Special Note Regarding Tiffany & Co.

Tiffany was established in 1837 by Charles L. Tiffany and his brother-in-law John B. Young. Although the name is immediately associated with jewelry, this aspect of the company did not originate until later. Initially Tiffany sold 'fancy goods' (paper, playing cards, walking sticks, fans, lacquer ware, Chinese goods, tea pots, punch bowls, etc.). In 1841, a new partner was added and J. L. Ellis initiated the expansion of the company with his first buying trip to Europe. By 1845, Tiffany, Young & Ellis stopped selling paste jewelry and began selling real jewelry. Silverware, along with perfumes, belts, hair preparations, watches, and clocks were added to the store. As a result of the political conflict in France in 1848, the company bought a large quantity of diamonds and former Crown Jewels. After 1849, the company's jewelry business expanded to a Paris location and was highly visible at the 1851 Paris Exposition. Tiffany bought out his partners in 1853, and thereafter expanded and continued its reputation to the present. The possibility exists that products from Tiffany could have gone to Santa Fe, but the question is who, apart from the wealthiest merchants, could have afforded the items.

> Martha Gandy Fales, *Jewelry in America 1600-1900* (London, England: Antique Collectors Club Ltd., 1995)
>
> Dorothy T. Rainwater**,** *American Jewelry Manufacturers* (Atglen, PA,: Schiffer Publishing Ltd., 1988)

http://press.tiffany.com/ViewBackgrounder.aspx?backgrounderId=33

www.fundinguniverse.com/company-histories/tiffany-co-history/

Leander J. Bishop, *A History of American Manufacturers from 1608-1860,* Third Edition, Volume III (New York: Augustus M. Kelly Publishers, 1968)

Magnifying Glasses: (See Magnifying Glasses in Household)

Necktie Pins: (See Ties Below)

Parasols and Umbrellas (Adult) (Children): Umbrellas, but more importantly, parasols used for centuries in Asia, most likely migrated to Europe (Italian Renaissance) with the Portuguese trade after 1500. Historically they were used by men of status, but eventually became an important fashion accessory for women. Technically, the umbrella was used for protection from rain. The parasol was used for protection from the sun.

The term 'umbrella' comes from the Latin 'umbra (shade) and 'parasol' from the Latin 'sol' (sun). The use of the terms was interchangeable until the mid 1700s. Small scale manufacturing began in England in the 1780s. William and John Sanger were famous umbrella merchants. James Smith and Son established an umbrella company in 1830. Samuel, Joseph, Edmund and John Wright, emigrants from England, established a long lasting umbrella and parasol company in Philadelphia in 1820.

http://fashion-history.lovetoknow.com/fashion-accessories/umbrellas-parasols

www.thebrelli.com/blog/parasol-umbrella-difference

www.leaf.tv/articles/differences-in-a-parasol-and-an-umbrella/

www.nytimes.com/1981/05/06/garden/umbrellas-drenched-in-history.html

www.katetattersall.com/parasols-during-the-early-victorian-era/

Jeremy Farrell, *Umbrellas and Parasols* (london: B.T. Batsford, 1985)

https://londonstreetviews.wordpress.com/2013/01/09/w-j-sangster-umbrella-makers/

Hooper, Rosalie K. **Out of the Shade: Uncovering the Manufacture and use of Umbrellas and Parasols 1830-1850** (Master of Arts Thesis) Accessed from: https://search.proquest.com/docview/1823266027/ (Colorado State university) www.james-smith.co.uk/history/

www.genealogyeemaker.genealogy.com/forum/surnames/topics/wright/13227/

Leander J. Bishop*, A History of American Manufacturers from 1608-1860*, Third Edition, 1868 (New York: Augustus M. Kelly Publishers, 1966)

Pearls: (See Jewelry Above)

Pen and Pocket Knives: (See Knives in Household)

Pens and Pencils: **(See Pencils and Pens in Household)**

Perfume, Perfume Boxes: Deodorants and antiperspirants (20th century) were preceded by fragrances and perfumes that were applied to clothing, handkerchiefs, or the skin. Perfumes were first sold by American pharmacists whose stock included dried herbs, essential oils (lavender, rose, sandalwood, musk), extracts, mineral salts, and tinctures.

What is considered high quality perfume was the domain of the French who considered themselves superior to American cosmetic manufacturers. They were established in the mid 1800s and are credited with the molecules (synthetics) that replaced unstable natural materials. Floris and Grossmith are two of England's oldest perfumers established in 1730 and 1735.

The future Caswell-Massey was established in Newport, Rhode Island in 1752. It is America's oldest apothecary and perfumer. (**See Also Soap in Household**). Solon Palmer is one of America's oldest perfumers who moved to Cincinnati in 1847 and established his business. People moving west purchased many fragrances from Solon Palmer Perfumer & Chemist. The most popular fragrances in the mid 1800s were floral and herbal (violet, rose, jasmine, lavender, honeysuckle, rosemary, thyme). Clove was also used. Given the cost of French and English perfumes, American perfumes were more likely sent to Santa Fe before 1860.

www.fragrantica.com/designers/Caswell-Massey.html

www.caswellmassey.com/pages/our-story

http://americanhistory.si.edu/collections/object-groups/health-hygiene-and-beauty/fragrance

https://perfumesociety.org/discover-perfume/an-introduction/history/the-victorians-and-perfumery/

www.fragrantica.com/designers/Grossmith.html www.florislondon.com/en_usd/history-of-floris

http://collectingvintagecompacts.blogspot.com/2011/05/solon-palmer-almost-americas-oldest.html

Pocket Knife Cases: (See Knives in Household)

Pocket Knives with Fork and Spoon: (**See Knives in Household**)

Pillows (Women's Small): The pillow as we know it today came into being in the 1800's but the concept goes back thousands of years. From hard stone pillows (Chinese) to softer casings stuffed with a variety of materials, pillows served numerous beauty (Japanese Geisha), health and hygienic purposes (keep bugs out of hair).

The Industrial Revolution (Textiles) gave rise to the mass-produced pillow that was affordable to everyone. Prior to that time, the pillow would have been made from a fabric not normally affordable by working people. America's oldest pillow manufacturer is the Starr Bedding Company founded in St. Louis, Missouri in 1848. Pillows going to Santa Fe would most likely have been from the United States after 1850.

http://pioneerthinking.com/pillow-facts-and-history

www.penroseproducts.com/history-of-the-pillow

https://vanwinkles.com/where-did-throw-pillows-come-from

www.starbedding.com/

Playing Cards: Documented use of cards goes back as far the 8th century Persians and 12th century Chinese. They came to Europe in the 1300s. The Spanish used cards as early as the late 1300s. The printing revolution accelerated the spread of cards. Different characters and images evolved in various national localities. Cards were brought to the British colonies and treated differently in localities due to religious rules.

The first cards going to Santa Fe were definitely from Mexico and did not look like what we see today. To appreciate the various distinct Spanish designs, go to Google Images and search 'Early Spanish Playing Cards'. Eventually what we might call the American model headed west with the early traders and later with the army in 1846. A Google image search for 'American Playing Cards 1830' will demonstrate the wide variety of designs.

In 1846, American forces in Mexico seized more than 4,000 decks of cards. The design was definitely 'foreign' to the soldiers who found swords, cups, clubs, and coins instead of 'royal' faces and numbers.

Early American playing cards were manufactured in Philadelphia and New York and sold by American stationers and post offices. Cards required special paper, coatings, and color. The earliest decks may be those made by Jazaniah Ford in Boston in the 1790s. Cards were manufactured by Lewis I. Cohen in New York City beginning in 1835. Other companies included Samuel Hart (Philadelphia, 1846), and Andrew Dougherty (New York, 1848). The United State Playing Card Company (Bicycle, Bee, Hoyle) was established in 1867 in Erlinger, Kentucky.

http://whiteknucklecards.com/history/briefhistory.html

www.wopc.co.uk/spain/

www.wopc.co.uk/usa/

https://bostonraremaps.com/inventory/early-american-playing-cards/

www.bloomberg.com/research/stocks/private/snapshot.asp?privcapId=36076

www.nps.gov/paal/learn/historyculture/soldier-pastimes.htm

Note on Shaving

Shaving equipment consisted of a variety of products and quality. The items could be classified as household or personal. Shaving cases could hold such items as razors, scissors, penknives, combs, oils, brushes, and soap. Razors were the most valued of all the accessories. Shaving accessories were highly valued and subject to theft. Most were made from wood, but some cases were made of 'shagreen' (fish skin) after 1850.

Little, Nina Fletcher, **Neat and Tiddy: Boxes and Their Contents Used in Early American Households**, Society for the preservation of New England Antiquities, University Press of new England, Hanover, NH, 2001.

Plates(Gold-Plated) for Shaving: In 1762, French barber Jean-Jacque Perret designed the first type of safety razor. Straight blades come into being in Sheffield, England in the mid 1800s. In 1847, Samuel Henson received a patent for his T-shaped safety razor. The Gillette brothers developed their razor in 1875.

www.randomhistory.com/shaving-history.html

www.gracesguide.co.uk/William_Samuel_Henson

Razor Strops: (See Leather Razor Straps Under Household Goods)

Razors (Straight) with Cases: Sheffield, England was noted for its cutlery and straight steel razors. Numerous American cutlery importers brought in English razors. Without a maker's mark, identifying razors sent to Santa Fe is impossible. However, it is most likely that American produced razors did go to Santa Fe. Companies manufacturing razors in the United States between 1821 and 1860 were: Harrington Cutlery Company (1818, Southbridge, MA), William Rogers (1841/Hartford, CT), H. Wilkinson (1843/ Hartford, CT), W. Stenton & Son (1846/New York City) (Jacob Wiss (1848/Newark, NJ), American Knife Co. (1849/Plymouth Hollow, CT)

http://straightrazorplace.com/razors/77559-henry-harrington-razor-americas-first-cutlery-manufacturer.html

www.badgerandblade.com/forum/wiki/History_of_Shaving

www.uniclectica.com/misc/manuf.html

http://connecticuthistoryillustrated.org/islandora/object/40002%3A20430

http://jwissandsons.com/razors/

www.madaspenhome.com/straightrazors/straight_razor_America_Knife_Company_Plymouth_Faux_Tortoise.html

Shaving Barber Boxes: There appear to be two types of boxes. The first was a vertical wooden box that held straight razors. The other type served a barber who moved around or served a single person. This box contained razors, a shaving mug and brush, and a stand up mirror.

Shaving Soap, Shaving Dishes, Shaving Brushes: In 1840, James Baker Williams established The J. B. Williams Co. in Glastonbury, Connecticut where he manufactured Genuine Yankee Soap (shaving soap).

http://archives.lib.uconn.edu/islandora/object/20002:860134676#ref3

http://chudnowmuseum.org/col/003947.htm#page=objectdetails

Small Sacks: **?**

Shoe Polish: Prior to the 18th century, a compound of natural wax, oil, and tallow (animal fat) was used to soften and waterproof shoes and boots. In the 19th century another polish called 'blacking' was made from mixing soot (carbon black, ash, or lamp black) with a beeswax or lanolin (sheep wool wax). The first commercial polish was made with a mixture of sugar, black dye and water but it rubbed on clothing. Robert Warren was an English blacking maker who sold his liquid product in jars and paste pots in the 1820s and 30s. As a young boy, Charles Dickens worked for a competitor of Warren. In 1832, James S. Mason established a shoe blacking and ink business in Philadelphia. Chicago became a major shoe polish area after the Civil War when the stockyards provided large quantities of tallow.

www.blancoandbull.com/boot-cleaning/boot-polish-history/

www.abcrauctions.com/warrens-liquid-blacking.html

http://mudlarking.blogspot.com/2013/01/blacking-pots-19th-century.html

Spurs: Spurs that became famous in early America and the 'old west' were patterned after European styles. The Spanish conquistadores were the first to bring spurs to North America. The Spanish craftsmen designed elaborate spurs. The British also sent spurs and saddlery to the colonies. The spurs were more utilitarian and thus less ornate than the Spanish. As western migration advanced, Mexican Texas experienced a combination of Spanish and British styled spurs. After 1846, the British style won out, but the result was a more distinctive Texas style. Alexander Barclay is listed as a saddler in Newark as of 1842. Among his many products he produced spurs. He later sold out to Joseph Baldwin who in 1866 sold the company to August Buermann who became a famous saddler. There were numerous English spur makers at this time. From its early inception in the early 1800's, the North and Judd Company became a famous spur maker in New Britain, Connecticut after 1860. The Buermann Company was the first to mass produce spurs in Newark, NJ after 1868. North and Judd bought out Beurmann in 1926.

www.oldspurs.com/collectible-spurs-identification-and-value-guide/

www.cowboy-spurs.com/antique-cowboy-spurs/north-and-judd-spurs/

www.spurscollector.com/history-of-bits-spurs/

www.spurscollector.com/bit-spur-maker/alexander-barclay-bits-and-spurs-value- guide/

www.oldspurs.com/spur-makers/old-master-makers/august-buermann/

https://nbindustrial.org/collection/north-judd/

Stirrups: Stirrups were usually created by saddlers. P. Wilson and Sons of Cincinnati manufactured and imported saddlery hardware and equipment as early as the 1830s. The Grimsley Company of St. Louis (**See Belts Above**) made stirrups for the US Calvary.

Albert Nelson Marquis, *The Industries of Cincinnati: The Advantages, Resources, Facilities, and Commercial Relations of Cincinnati as a Center of Trade and Manufacture* (An N. Marquis & Co., 1883) https://babel.hathitrust.org/cgi/pt?id=wu.89073035123;view=1up;seq=128 (Colorado State University Library).

http://wc.rootsweb.ancestry.com/cgi-bin/igm.cgi?op=GET&db=est3739-3&id=I25965

Ties (Including Neck Tie Pins): Although prototype neckwear dates back to early civilizations, modern era neckwear was evidenced by the early 18th century aristocratic 'cravat' made of muslin, linen, or lace. Because of its high maintenance, the 'stock', a high collar made of horsehair pig bristle, whale bone and or wood covered by cloth was replaced by the cravat by 1787 when the male collar extended above the stock. By the early 1800s it evolved into a cravat with a tied knot. In 1818, a book was published that described fourteen different styles of tying the cravat. It used the term 'tie' for the first time. A smaller cravat (tuxedo like tie) was designed by a Frenchman who emigrated to England in the 1820s. In the 1830s the cravat was held together by braces or tape. At this time the cravat pin (stick pin) and broach was designed. Depending on social status, cravats could be beautifully printed cotton or silk neck cloths, or plain. The tie did not become a standard part of male dress until the second half of the 19th century.

www.gentlemansgazette.com/evolution-neckwear-tie-cravat-scarf/

http://www.nytimes.com/1964/01/05/mens-tie-makers-expect-peak-year.html?mcubz=0

Avril Hart, *Ties* (New York, New York: Costume and Fashion Press, 1998)

Wire Hat String: This item is vague but may be the wire for the construction of bonnets.

Watches and Accessories, Crystal Lenses , Watch Glasses, Watch Guards, Silver and Gold Watch Chains, Steel Watch Keys, Tin Watch Keys, Common Watch Chains: (See Also Jewelry Above): The American watch industry originated in the 1830s with Henry and James Pitkin of Hartford, Connecticut. Silver watches with cases were imported from England and Switzerland. Gold watches had cases put on in the US. Watch cases were first produced in Philadelphia prior to 1812 and by 1857, sixteen case makers employing 294 workers produced almost a million dollars worth of cases. In 1850, William Howard Aaron Dennison, and David Davis established a watch company in Roxbury, Massachusetts. Over several decades and name changes, it evolved in to the Waltham Watch Co. Watch ribbons and chains were created in the early 1830s.

They were strung around the neck and attached to a watch which could be placed in a pocket or waistband. A slid bar (slide/ still used today in jewelry) could be utilized to keep the chain in position. The Gorham chain became quite popular. Most likely the above products made their way to Santa Fe after 1860.

> Martha Gandy, *Jewelry in America 1600-1900* (London, England: Antique Collectors Club Ltd., 1995)
>
> www.pocketwatchrepair.com/histories/waltham.html

TOOLS

Note on Tools and Hardware

During the time prior to 1830 tools sent to Santa Fe, would have been imported from manufacturers in Sheffield or Birmingham, England or made in the United States by producers on the east coast. New York and Philadelphia produced tools prior to 1800, but English tools were more prominent. After 1830, tools most likely came from companies in the United States that originated in the east. Liberty and Montville, Maine were early centers for tool making. Manufacturing in New England was logical because it was a center for ship building after 1820. The Lloyd & Supplee Hardware Company of Philadelphia was started in the 1830s. In New Britain, CT, the P.& F. Corbin Company was established in the 1840s. Tool manufacturing expanded west to larger cities down the rivers.

George B. Carpenter established a hardware company in Chicago in the 1840s. Cincinnati and St. Louis tool manufacturing was well established in the 1830s. The Belknap Company, producing forged items, was created by William Burke Belknap in Louisville, Kentucky in the 1830s and Rogers, Shapleigh & Co was doing business in St. Louis in the 1840s.

> https://ia902703.us.archive.org/33/items/englishamericant00roej/englishamerican t00roej_bw.pdf
>
> http://images.library.wisc.edu/Dominy/EFacs/EnglishTools/reference/dominy.englishtools.i0001.pdf
>
> www.davistownmuseum.org/PDFsforInventory/WebMaritimeIII_PDF.pdf
>
> https://chs.org/finding_aides/finding_aids/collins-co.html
>
> www.mwtca.org/the-gristmill/sample-articles/96-notes-on-new-england-edge-tool-makers-i-edge-tool-makers-hinsdale-nh-1840-1900.html

www.hangoutstorage.com/banjohangout.org/storage/attachments/archived/files/belknap-history-54179132014.pdf

http://otools1.wkfinetools.com/hardware/hardware-index.asp

Adz: This tool was used with a hewing axe to make square smooth beams from logs. The shape and construction evolved over the years. In 1843, the factory of David Maydole of Norwich, New York introduced the adz-eye hammer which became the standard. A perfected one piece metal head and handle were attached to the wooden handle to prevent it from 'flying off the handle'.

http://www.dalzielbarn.com/pages/TheFarm/Tools.html

Paul B. Kebabian, *American Woodworking Tools* (Boston: New York Graphic Society1978)

Awls: Awls were/are used by carpenters, leatherworkers and craftsmen for punching a hole in a piece of wood or leather.

www.merriam-webster.com/dictionary/awl

Axes: Numerous styles (functions, weight, shape) of axes existed. The American felling axe (chopping) was used for general purpose cutting. A hewing or broad axe was used to make square logs from trees. The Collins Company was incorporated in Hartford, CT., in 1834 and manufactured axes and other tools under the name Collins & Company.

http://www.dalzielbarn.com/pages/TheFarm/Tools.html

http://www.yesteryearstools.com/Yesteryears%20Tools/Glossary%3A%20Axes,%20Edge%20Tools,%20etc..html

Paul B. Kebabian, *American Woodworking Tools* (Boston: New York Graphic Society1978)

Leander J. Bishop, *A History of American Manufacturers from 1608-1860*, Third Edition, 1868, Volume III (New York: Augustus M. Kelly Publishers, 1966.)

Barrel Cleaning Tools: This item deals with cleaning firearms (rifles, pistols). The materials included a type of solvent, cloth and a length of rod to guide the cloth. There were different methods of cleaning depending on the firearm (pistols and rifles).

www.m1-garand-rifle.com/gun-cleaning/

Beams of Plough Screws: A plough beam was the bar (wood or metal) that was attached to a yoke which in turn was connected to a harness for the purpose of plowing a field. As best I could determine, the metal plough was attached to the beam with a screw.

www.oxfordreference.com/view/10.1093/oi/authority.20110803100332988

Note on Blacksmith Tools

Historically, blacksmithing tools were hand crafted by the user. In the 1830s, they were also being made by specialty shops and factories. 'Smiths' worked with forms of iron (cast, wrought, malleable cast) which were black in color- thus the name 'blacksmith'. The tools were divided into three groups. The hearth had a bellows, a water trough, shovels, tongs, and a rake. The second group consisted of an anvil, tongs, sledge, swages, cutters, chisels, and hammers. If the smith dealt with shoeing, he also used knives, rasps, files, nails, a hoof nipper, and a stand for supporting the animal's foot.

www.osv.org/19th-century-blacksmithing

www.engr.psu.edu/mtah/articles/techniques_blacksmith.htm

James M. Drew, *Blacksmithing* (Facsimile Reproduction) (Saint Paul, Minnesota: Webb Book Publishing, 1943)

Aldren A. Watson, *The Village Blacksmith* (New York: Thomas Y. Crowell Company, 1968. (This book is illustrated with excellent pictures of the various tools)

Cutters: This device was a piece of iron with a sharp edge (top) that fit into a hole on the anvil. The smith held the hot metal with a tong, set the hot piece on the top of the cutter and then using a hammer cut the hot metal.

Chisels: **(See Also Chisels Below)**

Hammers: Numerous types of hammers were used by the smith to flatten, cut, and shape both hot and cold material.

Files: One type of blacksmith file was used to 'file' off metal fragments. Another type was used to sharpen cutting tools. **(See Also Files Below)**

Nails: **(See Also Curtain Nails in Household)**

Rakes: This item is a long iron poker like rod that raked the coals in the hearth.

Rasps: This was a file like tool used to shave off hoofs in the shoeing process. (**See Also Rasps Below**)

Shovels: A blacksmith's shop shovel was by definition used for scooping (coal) **(See Shovel Below)**

Sledges: All smiths needed a helper called a 'striker' who wielded the sledge hammer and struck the metal where the smith directed. A sledge could be long or short handled and the head was heavier than a hammer.

Swages: a multi-purpose tool(s) that has can be of one or more shapes used to bend iron into a particular shape or form.

> www.swageblocks.com/what_is_swage_block.htm

Tongs: There were various shapes and sizes of tongs for different purposes that included handling hot and cold iron.

Carbine Keys: This is a very difficult item to identify. Because it is listed as a *llaves carabina* as contrasted to other types of keys (**See Household Items**), the possibility exists that is was a type of weapon. Without a further attempt to explain, look at the video in www.forgottenweapons.com/ria-simple-key-pistol/.

> www.forgottenweapons.com/ria-simple-key-pistol/

> http://www.littlegun.info/curios%20et%20antiquites/a%20clef%20pistolet%20a%20silex%20gb.htm

Carpenter's Rule: The making of rules began in the 1600s but the idea of a rule goes back to the Egyptians who used human body parts as a standard and the Romans who employed a folding bronze rule. A need for standardization and exactness advanced the topic, design, and making of rules in the 1600s. By the early 1800s rule making was an established business of the Belcher Brothers in New York (1824), Joseph Watts in Chestertown, MA.(1834), and The Jones Company in Hartford, CT. (1838). In 1838, Edward A. Stearns of Brattleboro, Vermont bought a business that continued to his death in 1856. The company was later purchased by the Stanley Rule and Level Company. Rules came in a variety of lengths depending on the job.

> Garrett Hack, *Classic Hand Tools* (Newtown, CT: The Tauton Press,1999)

> Paul B. Kebabian, *American Woodworking Tools* (Boston: New York Graphic Society, 1978)

Chisels: There were many styles of chisels depending on use in cutting wood or metal chisels for or woodwork included bevel (use in corners), firmer (straight end for heavier work), and paring and mortise (long and thinner for cleaning up joints). Cold chisels look more like punches and were used for cutting metal, making drill and nail holes. There were also sculpting chisels. Another type of chisel was called a gouge which had an arched tip that created a rounded cut. American Manufacturers included the Underhill Edge Tool Company in New Hampshire (Post-Revolution), The Buck Brothers of Worcester, MA. (1853), D. R. Barton and Company of Rochester, NY. (1832), L. & I. J. White of Buffalo (1837), and Peck, Stow, & Wilcox of Southington, CT. (Post-Revolution).

www.technologystudent.com/equip1/chisels.htm

www.toolsforworkingwood.com/store/know/chiselguide.html

Garrett Hack, *Classic Hand Tools* (Newtown, CT: The Tauton Press,1999)

Paul B. Kebabian, *American Woodworking Tools* (Boston: New York Graphic Society, 1978)

www.mwtca.org/the-gristmill/sample-articles/96-notes-on-new-england-edge-tool-makers-i-edge-tool-makers-hinsdale-nh-1840-1900.html

www.davistownmuseum.org/bioUnderhill.html

http://sawnutz.galootcentral.com/buck/index.htm

http://otools1.wkfinetools.com/edgeT/Barton&Co/history/barton-History-01.asp

http://vintagemachinery.org/mfgindex/detail.aspx?id=2721

Clay: This material, along with milled lumber, window glass, and hardware, was used as a building material in Santa Fe after 1821 and more so beginning in 1846. Clay fired bricks were used at the top of adobe structures to protect the walls from rain and erosion. After the arrival of the transcontinental railroad in the 1880s, fired bricks were transported to Santa Fe. Although quality clays were extracted in Illinois, Ohio, Kentucky, and Missouri, the transportation of such a heavy material from any one of these states is highly questionable. Most likely clay from the Cretaceous deposit at Las Vegas, New Mexico was sent to Santa Fe and over time from other micaceous clay deposits in the state.

https://static1.squarespace.com/static/5772daf0b3db2b0a27ef10f8/t/5790eaff2e69cf0f61900199/1469115139476/HistoricProperties.pdf

http://brickcollecting.com/history.htm

http://infosys.murraystate.edu/KWesler/Symposium%20OVHA%20Volume%2017/V17_p073-090.pdf

Heinrich Ries and Henry Leighton, *History of the Clay Working Industry In The United States* (New York: John Wiley & Sons, 1909) https://ia601406.us.archive.org/28/items/historyclaywork00leiggoog/historyclaywork00leiggoog.pdf

Copper Primers: (See Percussion Caps)

Curtain Screws: Most screws made before 1840 were hand cut on a lathe and had little or no taper. Early threaded-like wooden screws are attributed to the Providence, Rhode Island Screw Company in 1834, and to the New England Screw Company in 1849. A US Patent for a screw cutting machine was filed in 1836, and US Patent 154 was filed for a screw design in 1837. The Eagle Screw Company (1840) became a well known company and along with The New England Screw Company was bought out by the American Screw Company in 1860.

http://monroefurniturerestoration.com/antique-furniture-id-basics-june2010/

www.wag-aic.org/Am_Wood_Screws.pdf

www.artinruins.com/arch/?id=historical&pr=americanscrew

Digging Blade: (See Shovels Below)

Drills and Augers: These tools were used for boring holes in wood or leather. Drills were used for cutting out holes for screws and bolts. Augers used to punch holes, ranged in size from a large wooden handled shipwrights tool to the simplest called a bradawl which was used to punch a 'pilot' hole into wood for inserting a screw or nail.

Garrett Hack, *Classic Hand Tools* (Newtown, CT.: The Tauton Press,1999)

Leander J. Bishop, *A History of American Manufacturers from 1608-1860*, Third Edition, 1868, Volume III (New York: Augustus M. Kelly Publishers, 1966.)

Explosives: Prior to the invention of nitroglycerin in 1866, Black Powder was the explosive sent to Santa Fe. It was made by combining a mixture of sulfur, charcoal, and saltpeter (Potassium Nitrate/KNO2). Rolled and pulverized, it was dried into cakes for various purposes. This product was used with 'black powder' rifles and in the proper quantity for excavation or demolition.

http://railroad.lindahall.org/essays/black-powder.html

Files (Knife Sharpening), **Files (Sharpening)**, **Files (Round)**: Files were and still are used for smoothing rough surfaces or sharpening tools. There are grades of files from small grooves(teeth), for very smooth effect, to larger, more spaced grooves for removing metal fragments. The job determines the type to be used. The mill file was the most common used by a sawyer (lumber mill cutter) to sharpening the saws. **(See Also Rasps Below)**

> Garrett Hack, *Classic Hand Tools* (Newtown, CT.: The Tauton Press,1999)
>
> http://images.library.wisc.edu/Dominy/EFacs/EnglishTools/reference/dominy.englishtools.i0001.pdf

Fishing Line: Fishing line and hooks date back to the Egyptians in 2000 BCE and to the use of silk line in China in the 300s BCE. The earliest mention of line in Europe was braided horsehair used in the 1400s. In the early 1800s horsehair was braided with silk. As the textile industry evolved during the Industrial Revolution, fishing line was made from braided hemp, cotton, linen, and silk. Numerous American textile companies made fishing line after 1860. If line went to Santa Fe before 1860, it came from an American textile mill or an English or an Irish mill that made line.

> www.historicanglingenterprises.com/
>
> www.trails.com/facts_34947_fishing-line-history.html
>
> www.historyoffishing.com/fishing-tackle/fishing-line/
>
> www.fishinginschools.org/cafcas/linehistory.htm

Fish Hooks: Early American hooks were hand forged. At first they did not have eyes and the line was wrapped around and knotted on the hook. This hook was called a Snell Hook. If you wanted an eye, it could be made during the forging process. British fish hook makers moved out of London by 1800 and established themselves in Redditch- ten miles south of Birmingham. Hooks with eyes were first mass produced in England in 1826. Manufacturers in Redditch competed with hook makers in Scotland and Dublin.

> www.howtofishguide.com/tackle/fishing-hook-history.html
>
> www.worldfishingnetwork.com/community/post/fish-hook-evolution-from-the-ancient-gorge-to-the-lazer-trokar
>
> www.fishingmuseum.org.uk/index.html

Flint Stones, **Flint for Rifles**: Flint is a quartz that when struck by steel produces a spark that ignites the gun powder and ejects the ballistic from the rifle or pistol. The 'flint lock' originated in the 1600s in Europe and was still in use in the 1800s. The use of flint was slowly replaced by percussion caps **(See Percussion Caps Below)**. Flint going to Santa Fe could have come from a number of American sources. An eight mile long deposit 35 miles east of Columbus, Ohio is called the "Great Indian Quarry of Ohio". Pits up to twenty feet were dug into the ground to mine the flint. As in Europe, shafts were dug down and then rooms were dug off the vertical shafts. A major site for flint was the Alibate Quarry 30 miles northeast of Amarillo, Texas. Raw flint could have come from these sites, but finished rifle flints most likely came from Brandon, England- 30 miles northeast of Cambridge. In 1813, fourteen Brandon flint masters, knappers, and apprentices were supplying the British Army with over a million flints. After the Napoleonic War, employment dramatically dropped. When the US stopped importing flints from England (war), they would have purchased them from several knappers in France.

www.mman.us/gunflints.htm

www.ohiohistory.org/visit/museum-and-site-locator/flint-ridge-quarries

https://igs.indiana.edu/ReferenceDocs/GeoNotes/Geo Notes_WyandotteCave.pdf

www.nps.gov/alfl/index.htm

http://peopleofthestone.com/finding-flint-identifying-source-can-be-both-helpful-and-easy-do

http://nativeamericannetroots.net/diary/1899

http://historical-american-glass.com/the-providence-flint-glass-company-1831- 1834.html

www.ancientcraft.co.uk/Flintknapping/flint.html

Halters: This product is a 'halter' for horses and would have come from any number of tack makers.

Iron Squares: This product is a measuring device normally called a carpenter's square or rule **(See Carpenter's Rule Above).** One form or another has existed for hundreds of years. In 1819, Silas Hawes of Vermont created the 24 X 2 inch blade with a 16 X 2 inch tong. The mathematical notation (numbers) can be used to create measuring parameters and solve measurement problems in construction. The early squares were made of malleable iron later called cast steel. The Eagle Square Manufacturing Co. of South Shaftsbury, VT was started in 1847.

http://sections.maa.org/okar/papers/2007/lloyd.pdf www.davistownmuseum.org/bioEagleSq.htm

www.woodworkinghistory.com/glossary_steel_square.htm

www.carpentry-tips-and-tricks.com/Carpenter-square.html

http://cdi.uvm.edu/findingaids/collection/eaglesquare.ead.xml

Lancets: This medical instrument was a two-edged, sharp pointed knife that came in various sizes depending on use. It could be used for bloodletting, vaccination, and other medical procedures requiring the cutting of skin. Medical instruments were manufactured in the United States before the Revolution. Philadelphia was the center for instruments and catered to the newly established University of Pennsylvania (1765) and later the Jefferson Medical School (1825). Steel was imported from England in both raw and finished product. By 1805, ten instrument makers were listed in the Philadelphia Directory. The Shively family became well known instrument makers in Philadelphia. As general commerce made its way down the Ohio and Mississippi Rivers, so did the manufacturing of medical instruments. Pittsburgh, Cincinnati Louisville, St. Louis, and New Orleans all had numerous 'cutler' who made surgical instruments. The George Tiemann & Company of New York made surgical instruments and was major supplier to the government during the Civil War. Other American medical instrument makers included Van Wyck Brinkerhoff of New York.

http://dictionary.cambridge.org/us/dictionary/english/lancet

James Edmondson PhD, *American Surgical Instruments: An Illustrated History of their Manufacture and a Dictionary of Instrument Makers to 1900* (San Francisco: Norman Publishing, 1997)

www.sciencemuseum.org.uk/broughttolife/objects/display?id=11012

www.medicalantiques.com/civilwar/Surgical_Instrument_Makers/Tiemann.htm

https://archive.org/details/27510940R.nlm.nih.gov

Rattraps: Research shows that many patents were granted for traps but little or no information exists for manufacturers before the Civil War. Ebenezer Oliver of Philadelphia received a patent as early as 1842. A flat trap for mice and rats was patented in 1847 by Job Johnson of Brooklyn, New York. Another patent (1855) was acquired by the Lucius Bradley Company of Watertown, Connecticut. The C. Jillson Company patented a trap in 1857.

https://historiesofecology.blogspot.com/2014/05/priority-issues-with-mousetrap-patents.html

http://bioimplement.blogspot.com/2012/10/the-mouse-trap-redux.html

www.antiqbuyer.com/all_archives/misc-archives/traps.htm

http://rickcicciarelli.com/traps.html

Percussion Caps: This item is associated with ballistics (projectiles). A primer was a small cylinder filled with an explosive material that when struck by the hammer, set off a small charge that then ignited a larger charge that propelled the bullet forward. Percussion caps were first designed in 1814 by a Joshua Shaw, an immigrant from London. He received a patent in 1823 but did not realize any economic gain because others used the idea. Percussion caps came primarily in sizes 10 and 12. In addition to steel caps, copper primers (sizes 8, 10,12) were popular. Primers had an advantage over muzzel loaders because the primer remained dry. The amount of powder varied according to use. When spent, the primers were saved and could be reloaded. The creation of an all inclusive cartridge did not come until the 1850s.

www.bevfitchett.us/chemical-analysis-of-firearms/primer-cups-caps.html

http://guns.wikia.com/wiki/Percussion_cap

www.scientificamerican.com/article/joshua-shaw-artist-and-inventorthe/

www.mman.us/guns.htm

Pincers and Tongs: A pincer is a scissor action griping tool that resembles a lobster claw or set of pliers. A tong is a gripping tool similar to an ice tong or hand tong used by the blacksmith. Both items came in a variety of shapes for different uses.

http://wikidiff.com/pincers/tongs

Pistol Primers: Like percussion caps, pistol primers served the same purpose as percussion caps. The powder varied and the placement of the cap(s) varied according to the model.

Rasps: Like files, rasps were used for removing material (wood) from a project. They too range in size from smooth (less material removed) to rough.

Shovels, Spades: A shovel is for scooping whereas a spade is for cutting. The Ames Shovel Works was established in Easton, Massachusetts in 1777. By 1830, their lightweight, iron blade with wooden handle shovel was superior to any import.

There is little doubt that these shovels made their way to Santa Fe. Ames shovels were found in the excavation of *The Arabia* steamboat which sank in 1856. A digging blade is most likely a triangular shaped cutting instrument used to cut drains, or water trenches. This tool would have been very useful when making and maintaining *acequias* (irrigation canals) in the Santa Fe area- the most historic being the *Acequia Madre*.

https://eastontownma.documents-on-demand.com/Document/8768c7ca-29ce-48bc-8e7f-1a43033ba123/ShovelWorksHistory.pdf

https://gardening.stackexchange.com/questions/5662/what-is-the-difference-between-a-spade-and-a-shovel/14611

Kathryn McNerney, *Antique Tools: Our American Heritage* (Paducah, Kentucky: Collectors Books, 1991)

Sickles: This small hand held tool (circular blade) was used for cutting grain, grass, weeds or lopping something off like beet tops. Its larger cousin was called a scythe. Given the generic nature of this product, it could have come from numerous hardware companies.

www.quora.com/What-is-the-difference-between-a-sickle-and-a-scythe

www.asabe.org/media/129817/timelinespart2.pdf

Small Hand Saws: Different cutting jobs required different saws. Logging and pit cross saws were very long and required two sawyers. Frame saws cut wood lengthwise to make planks and veneers. A 'felloe' hand saw was the precursor to the modern ban saw. Spear & Jackson of Sheffield, England was the pre-eminent saw maker in the 19th century. American saw makers included:

Pre 1820: William Roland (Roland Saw Works, used Anchor Brand mark)/
Philadelphia 1802

1820s: R. Hoe & Co./ New York

1830s: Welch & Griffiths Saw Manufacturing Co/ Boston

1840s: Walter Cresson/ Philadelphia

Keystone Saw Works (Became Disston &Sons) / Philadelphia

John H. Bringhurst Saws/ Philadelphia

Joseph Flint & Co/ Rochester, NY.

William Toland/ Baltimore, MD.

James Turner/ Philadelphia

1850s: Albany Iron and Saw Works/ Albany, NY.

E. C. Atkins & Co, Inc./ Indianapolis, IN.

Johnson & Conaway (Union Saw and tool)/ Philadelphia

Monhagen Saw Works/ Middletown, NY.

Richardson Brothers Saw Works/ Newark, NJ.

Woodrough & McParlin (Ohio Saw Works)/ Cincinnati, OH.

Garrett Hack, *Classic Hand Tools* (Newtown, CT: The Tauton Press,1999)

https://ia601905.us.archive.org/17/items/SpearJacksonStoryOfTheSaw/Spear%20&%20Jackson%20Story%20of%20the%20Saw.pdf

www.takeadiptools.com/page19.php

http://hus-saws2.wkfinetools.com/MSW-WMC/history/WMC-Hist01-timeline.asp

www.davistownmuseum.org/bioRowland.htm

Shearing Scissors: (See Scissors in Household)

Steel:

Sterns, Worthy Putnam. "The Foreign Trade of the United States from 1820 to 1840." *Journal of Political Economy* 8, no. 4 (1900): 452-90. http://www.jstor.org/stable/1822766. (see p 475)

Spring Lancets: (See Lancets Above)

Sharpening Stones: Sharpening, or whetstones, were and are used for sharpening knives, scissors and tools. As early as 1821, a quality sandstone was mined from a quarry west of the town of Orleans, Indiana- 40 miles northwest of Louisville, KY. The stone (whetstone and grave stone) was processed nearby at Hindostan Falls (now a ghost town) and then transported by wagon to Louisville and on to New Orleans via the Ohio and Mississippi Rivers on flatboats and later steamboats. Hindostan Falls quarry was well known for its oil stone. There is no doubt that products from both locations made its way to Santa Fe.

https://igs.indiana.edu/referencedocs/geonotes/geonotes_whetstoneindustry.pdf https://spydersden.wordpress.com/2012/03/23/indiana-ghost-town-hindostan/

FOOD

Note

The relevance of American east coast ports to the Santa Fe Trail supply chain is obvious. New York, Philadelphia, Boston, Baltimore, and Charleston all received shipments from foreign producers. One American port tends to be neglected in the supply chain conversation and yet its relevance to the Santa Fe trade was just as important. Although the above cities have not been given separate treatment in this work, New Orleans should be individually recognized.

In most writings New Orleans is described as the final port for the transportation of goods 'down' the Ohio and Mississippi Rivers. Rarely is it recognized for shipments 'up' the Mississippi. The logic for placing an introduction to the port of New Orleans here is that many of the food products listed below came 'up' the Mississippi River to St. Louis and then continued up the Missouri River for transfer to land transportation to Santa Fe.

Mary Elizabeth Real Pascal Marin left France in 1718 to serve as an indenture in the newly established settlement of New Orleans. She married a sea captain (Pacal) who was murdered in the Natchez Indian Uprising in 1729 and then married another sea captain and trader Francois Marin. He was a Gulf trader who transported goods between Veracruz, Cartagena, Havana, and New Orleans.

When her will was executed in 1777, a list of objects included hand painted Chinese porcelain, ivory handled forks, etched wine glasses, silver plated fireplace irons, guilt frames, walnut chairs, gilded coffee pots and tea service, mahogany bed, embroidered cotton covers and silk mosquito curtains. This demonstrates that New Orleans was already a major port in the 18th century but its history has not been relevant to 'standard American History' which begins on the east coast in 1607. Even after 1803 (Louisiana Purchase), the city's history remained a footnote and today most think of New Orleans as a tourist destination. The history of New Orleans is as rich and complex as any city in the United States.

After 1730, France could not be counted on as a consistent supplier. Although the French government (Louis XV) attempted to control trade, New Orleans, with the unofficial approval of the city government, conducted illicit (smuggling) trade with the Mississippi-Caribbean region and replaced France. John Laffite and his brothers ironically 'helped the cause'. The importance of New Orleans as a major US and international port rapidly evolved. In 1802, 256 ships entered the Mississippi- 170 American, 97 Spanish, and only 1 French. The city had a population of 8,000 in 1803 and expanded to 27,176 by 1820 (fifth largest US city). In 1821, 441 flatboats, 784 barges, and 287 steamboats arrived in the city. During the year 1836-37, 1,372 steamboats arrived.

Shipping to and from New Orleans on the Ohio, Mississippi, and Missouri Rivers was greatly affected by water flow. Summer was the down period for larger vessels due to flow and the associated dangers (grounding, snags, etc.) Only smaller keel or flat boats would attempt the navigation. Depending on adequate summer rain, use of larger vessels could commence. Winter rain contributed to continued navigation. After February, rain and snow melt raised the flow through mid June. Crop harvesting and cattle processing and shipping was affected by the seasonal flow with crops shipping in the Fall, and processed goods in the Spring

In addition to trade in the Mississippi-Caribbean area, New Orleans and Mexico conducted valuable trade in the 1830s. Merchants traded on a regular schedule with the Mexican ports of Tampico, Matamoras, Brazoria, Tuxpan, and the Galveston Bay region. By the end of 1830, a direct regular shipping schedule was established between New Orleans and Liverpool.

The demise of New Orleans as a major port came with the development of the railroad and the silting of the mouth of the river. By 1850, large vessels had a difficult time navigating the sand bars. Forty ships ran aground in 1852 and were detained for weeks. In other cases, cargo was transferred to smaller vessels at the mouth of the Mississippi and taken up river. Attempts to rectify the problem were unsuccessful.

New Orleans did not become a viable port until 1903-1940 when new wharves were built, a navigational canal connected the River to Lake Pontchartrain, and a public grain elevator was built. In 1973, the first terminal was constructed and dedicated to handling container ships.

Shannon Lee Dawdy, *Building the Devil's Empire: French Colonial New Orleans* (Chicago: University of Chicago Press, 2008)

James E. Winston *Notes on the Economic History of New Orleans, 1803-1836*, The Mississippi Valley Historical Review, Vol. 11, No. 2, Sep.,1924, Oxford University Press on behalf of Organization of American Historians http://www.jstor.org.ezproxy2.library.colostate.edu/stable/1893 582

Eric E. Haites , James Mak, and Gary M. Walton, *Western River Transportation: The Era of Early Internal Developments 1810-1860* (Baltimore: Johns Hopkins University Press, 1975)

Thomas E. Redard, *The Port of New Orleans: an Economic History, 1821-1860,* Volumes I and II, "Trade, Commerce, Slaves, Louisiana", (Dissertation) Baton Rouge: (Louisiana State University and Agricultural & Mechanical College, 1985) https://digitalcommons.lsu.edu/cgi/viewcontent.cgi?referer=https://www.google.com/&httpsredir=1&article=5150&context=gradschool_disstheses

http://www.portno.com

Almonds : The first almonds were imported into the United States in 1821. In that year, 264,818 pounds were imported and by 1859, 5,439,210 pounds. Attempts to grow almonds in Georgia, Texas, and New Mexico were unsuccessful due to frosts and issues associated with high humidity. Spain was the primary source for almonds until California became America's major almond producer in the 1880's.

Yearbook of the United States Department of Agriculture 1897, Washington Government Printing Office Issue 3693, 1898. https://books.google.com/books?id=EZE3AQAAIAAJ&pg=PA334&lpg=PA334&dq=almond+imports+1840&source=bl&ots=NY5uPAJexY&sig=kaLCe3RX33xZFW4tnJxybt5MCZA&hl=en&sa=X&ved=0ahUKEwjGz5e7rr7VAhXGjlQKHSkLDmUQ6AEINjAD#v=onepage&q=almond%20imports%201840&f=false

www.nationalalmondday.com/history-of-almonds.html

William Waterson, *A Cyclopaedia of Commercial, Mercantile Law, Finance, Commercial Geography, and Navigation* (London: Henry Bohn, 1863), https://books.google.com/books?id=N5lKAAAAMAAJ&pg=PA628&lpg=PA628&dq=Spanish+almond+imports+1840&source=bl&ots=g711QIHc9Q&sig=Hz2j62QVDCTzvF0Q3NRizlMBsY&hl=en&sa=X&ved=0ahUKEwiwroG8ub7VAhXEs1QKHWHWCuU4ChDoAQg6MAQ#v=onepage&q=Spanish%20almond%20imports%201840&f=false

Bacon: By the early 1820s, pork production was already making its way down the Mississippi and soon, up the Missouri. Cincinnati packers devised a superior means of curing pork and shipped barreled pork down the Ohio in 1840. The city proclaimed itself 'Porkopolis'. As commerce spread down the rivers, Tennessee and Kentucky became the pig and corn producing leaders in the 1840s and 1850s.

http://americanhistory.si.edu/onthewater/exhibition/4_4.html www.leopold.iastate.edu/files/pubs-and-papers/2006-08-united-states-pork-niche-market-phenomenon.pdf

James R. Grossman, Ann Durkin Keating, Janice L. Reiff, (ed.), *The Encyclopedia of Chicago* (Chicago: University of Chicago Press, 2004.

Beans: Given the great variety of species and the number of bean growing areas, this subject was too broad.

Butter: Not enough information to make a judgment.

Candies (Sweets): Mexican candy was the primary product going to Santa Fe prior to the 1840s when candies were mass produced in eastern cities and the inland cities of Pittsburgh, Cincinnati, Louisville, and St. Louis. After the Spanish conquest, basic ingredients expanded the creation of candies- many of which were/are associated with festivals and holidays. Over time, many monasteries developed their own unique candy specialties in Mexico City, Puebla, Queretaro, Oaxaca, Chiapas, Michoacan, Yucatan, and Veracruz.

Below are a few that may have made their way to Santa Fe. *Cajeta* also known as *dulce de leche* was a thick sweetened syrup made from goat or cow's milk. It was easily transported and lasted for months. The *Cocado* was a combination of coconut, egg yolks, with optional flavorings. *Thepalanqueta* was made with dried fruit, nuts, and rice nugget mixed with honey or sugar. *Tamarindos* (from tamarind plant) were made in a variety of ways with the pulp of the tamarind and sugar. They could be eaten with chili, salted, or just plain. The *alegrías* combined raisins, amaranth seed, honey or sugar. The sugar skull used during 'Day of the Dead' is called *Calaveras de Azúcar*. Apart from candy, sweets like Marzipan may have been shipped north from Mexico. **(See Also Wafer Below)**.

https://realestatepue.wordpress.com/2014/10/20/history-and-information-about-mexican-candy/

http://www.puertovallarta.net/fast_facts/mexican-confectionery-candies-sweets-1.php

www.mexgrocer.com/catagories-mexican-candy-traditional.html

Cinnamon: The use and cultivation of cinnamon goes back thousands of years. Its origin is debated but it is grown in Southeast Asia and Sri Lanka (Ceylon). Ceylon cinnamon is the dried inner bark of *Cinnanomomum zeylanicum* (laurel family) from the evergreen tree. Cassia cinnamon (lesser quality) is prepared from a similar evergreen located in China, Laos, Cambodia, Vietnam, Burma, and Indonesia. Its sale was recorded as early as 1500 BCE and sent across the various spice routes.

Arab traders dominated distribution after 600 BCE and introduced it to the Mediterranean world. The Portuguese took control of its export from Ceylon in the early 1500s. The Dutch superseded the Portuguese, controlled the spice trade and continued their dominance until the French and English entered the seafaring competition. By the early 1800s, the Dutch, British, and French had politically divided up spice producing locations from India to Southeast Asia.

After 1834, large quantities of cinnamon were imported into England, but four-fifths was re-exported to Spain, Italy, Mexico, and the West Indies. The same can be stated for the cheaper importation of cassia cinnamon. The earliest cinnamon that went to Santa Fe may have logically come from Mexico by way of Spain (imported from England). After 1821 it might have come from cities on the east coast. America's oldest spice company The Stickney & Poor Spice Company (Northwest Boston) opened in 1815 and continues to operate in New Hampshire. If it did come from any of the major cities on the east coast, it was imported from England or Holland.

> www.history.com/news/hungry-history/cinnamons-spicy-history
>
> Andrew Dalby, *Dangerous Tastes: The Story of Spices* (Berkeley, Los Angeles: University of California Press, 2000.)
>
> John W. Parry, *Spices: The Story of Spices*, Volume 1 (New York: Chemical Publishing Company, Inc., 1969)
>
> J. T. Danson, *Some Particulars of the Commercial Progress of the Colonial Dependencies of the United Kingdom, during the Twenty Years, 1827-46, Journal of the Statistical Society of London*, vol. 12, no. 4, 1849, *JSTOR*, www.jstor.org/stable/2338276.
>
> www.thesomervilletimes.com/archives/57690
>
> The Illustrated American Vol. VIII, August September, October, November, The Illustrated American Publishing Company, New York, 1891. https://babel.hathitrust.org/cgi/pt?id=njp.32101079672927;view=1up;seq=12

Cocoa, Chocolate: Cocoa is indigenous to South America and was used by Pre-Columbian civilizations in special ceremonies. Cocoa (bean) should not be confused with coca tree leaves which produce cocaine. The term in Latin is *Theobroma cocoa* (food of the gods).

The Spanish encountered the product, maintained a monopoly on 'chocolate', and introduced it to Spain in 1544. The use of the bean as a commodity began in 1585 and the Spanish monopoly ended as the bean was disseminated throughout Europe.

It was sold in Italy as a medicine in 1644 and as a drink in London in 1657. The first mention of chocolate in colonial America was in the Massachusetts Bay Colony in the winter of 1667-8.

Records show it was served in Boston in 1670. By the turn of the 19th century, Boston and Philadelphia were the leading producers of chocolate. Early imports of cocoa and chocolate products going to Santa Fe come from Spain via Mexico City. Diaries used by Grivetti and Shapiro (below) show that prior to 1821, cocoa and chocolate came north from Mexico City, Chihuahua and even Acapulco. After Mexican independence (1821), Spain banned the exportation but other sources were found and over time included eastern merchants and brokers.

www.worldcocoafoundation.org/about-cocoa/history-of-cocoa/

www.cadbury.com.au/About-Chocolate/Cocoa-Growing-Countries.aspx

Clarence-Smith, William Gervase, *Coco and Chocolate 1765-1914* (New York: Rutledge 2000), https://books.google.com/books?id=-1WGAgAAQBAJ&pg=PA34&lpg=PA34&dq=American+importation+of+cocoa+1840&source=bl&ots=r05FRT5e2A&sig=PV8uWG8Q2oFeGtSO8SMq3ibrZgA&hl=en&sa=X&ved=0ahUKEwiGirnumfDVAhVKylQKHeKcAMsQ6AEISjAG#v=onepage&q=American%20importation%20of%20cocoa%201840&f=false

https://americanhistory.si.edu/sites/default/files/Gay_Chocolate%20Productio.pdf

Andrew Dalby, *Dangerous Tastes: The Story of Spices* (Berkeley, Los Angeles: University of California Press, 2000)

Louis Evan Grivetti, Howard Yana Shapiro (eds.), *Chocolate, History, Culture, and Heritage* (Hoboken, New Jersey: A. Wiley & Sons Inc., Hoboken, New Jersey, 2009)
https://ebookcentral.proquest.com/lib/csu/reader.action?docID=427649

Coffee (Common and Fine): According to author Mark Pendergrast, coffee beans originated in Abyssinia (Ethiopia) during the first century CE. Thereafter, beans and cultivation made their way across the Red Sea to Arabia. By 1536, the Ottoman Turks sent beans westward to Alexandria (Egypt) where they were picked up by French and Venetian merchants. Eventually the Turks lost control over the cultivation of the beans when they were smuggled out to India by a Muslim trader and a whole tree was smuggled to Holland by the Dutch around 1616.

From then on, the dissemination of beans and their cultivation expanded around the world. Small shipments of green beans arrived in New England as early as 1650, but substantial imports did not develop until the 1790s when US merchants (New York City) were granted permission to buy beans and ship them back on US ships from French ports in the Indian Ocean.

The wholesale roaster appeared soon after and the importation of green beans rapidly expanded to other cities. In 1803, coffee was first imported into the city of New Orleans. Although New Orleans was an ideal location for importing green beans, transportation north was too slow until steamboat power when coffee importation rapidly expanded. Most coffee imported into New Orleans in the 1820s came from Cuba, but by 1840, New Orleans was the second leading importer of green beans and by 1844 imported nearly half of Brazil's (Rio De Jenario and Bahia) crop.

With the east-west construction of railroads, less coffee and other products were shipped north on the Mississippi because of freight rates. The blockade of the Mississippi River during the Civil War also hurt New Orleans. After the war, New Orleans merchants had to design cheaper means of contracting and shipping coffee.

Mark Pendergrast*, Uncommon Grounds: A History of Coffee and How It Transformed Our World* (New York: Basic Books, 1999)

www.web-books.com/Classics/ON/B0/B701/35MB701.html

https://wheelinpetesgreencoffee.com/coffee-tree-arabica-coffee-beans/

Thomas E. Redard, *The Port of New Orleans: an Economic History, 1821-1860*, Volumes I and II, Trade, Commerce, Slaves, Louisiana, (Dissertation) (Baton Rouge: Louisiana State University and Agricultural & Mechanical College, 1985), https://digitalcommons.lsu.edu/cgi/viewcontent.cgi?article=5150&context=gradschool_disstheses

William H. Ukers M.A., *Coffee*, The Tea and Coffee Trade Journal, New York, 1922. http://www.gutenberg.org/files/28500/28500-h/28500-h.htm

www.smithsonianmag.com/arts-culture/chicory-coffee-mix-new-orleans-made-own-comes-180949950/

The Foreign Trade of the United States from 1820 to 1840 Author(s): Worthy Putnam Sterns Source: Journal of Political Economy, Vol. 8, No. 4 (Sep., 1900), pp. 452-490 Published by: The University of Chicago Press

www.luckybeantours.com/a-little-new-orleans-coffee-history/

J.D.B. De Bow*, The Industrial Resources of the Southern and Western States*, Vol I, (New Orleans: Pudney & Russell Printers, Merchant's Exchange,

1852) https://books.google.com/books?id=w3JGAAAAYAAJ&pg=PA287&lpg=PA287&dq=brazilian+coffee+to+New+Orleans+1840&source=bl&ots=Zgc_hyPWbZ&sig=2Y4ykt3mZeFxmRhU6giKRWVgcZU&hl=en&sa=X&ved=0ahUKEwi956X6hNzVAhXKhFQKHUYHCwoQ6AEIOjAD#v=onepage&q=brazilian%20coffee%20to%20New%20Orleans%201840&f=false

Crackers: The cracker industry was one of America's first enterprises. The first cracker bakery (Pearson & Sons Bakery) was established in 1792 in Newburyport, Massachusetts. They produced what they called 'Pilot Bread', an improved version of 'hard tack' which was a hard cracker created by a ship's baker who wanted to better preserve bread for voyages.

In 1801 Josiah Bent opened a bakery in Milton, Massachusetts and called his product 'cracker'. A patent for the process of making crackers (biscuits) was later awarded in 1813 and in 1815 a patent for a biscuit making machine was recognized. The early crackers were thin, unsweetened, bite sized biscuits made for sailors and passengers. They were made of flour, water, no shortening, and were packed in barrels and sold to various enterprises. In the 1840s, the soda cracker, butter cracker, and round sugar biscuit were developed.

Today's popular graham cracker was first manufactured by Russell Thacher Trall in the 1850s. The original 'healthy' graham cracker was made from milled whole wheat (today made of sugar and other ingredients) and was based on Sylvester Graham's health diet. Godfry Keebler opened his bakery in Philadelphia in 1853. The oldest family owned cracker and cookie maker (Richmond Bakery, 1855) continues to operate in Richmond, Indiana, 80 miles north of Cincinnati. Crackers going to Santa Fe could have come from any number of producers from the east coast or inland companies and those in cities along the Ohio and Mississippi.

www.newburyportnews.com/opinion/pearsons-cook-up-a-name-for-themselves/article_0ea5abe3-7893-5752-a90c-fcaa95e5752a.html

David O. Whitten, Bessie E. Whitten, *Handbook of American Business History* (New York: Greenwood Press, 1990)

Andrew F. Smith, *Food and Drink in American History: A 'Full Course' Encyclopedia,* Vol 1, A-L, ABC-CLIO, LLC, 2013. https://books.google.com/books?id=o7gxBgAAQBAJ&pg=PA244&lpg=PA244&dq=cracker+production+1840&source=bl&ots=Qq4qLZSMU&sig=d_D6u_DRL8WdTakL9sqoSNR4jMk&hl=en&sa=X&ved=0ahUKEwiDpd7Spf_VAhUmh1QKHelZBDAQ6AEITjAL#v=onepage&q=cracker%20production%201840&f=false

http://richmondbaking.com/about-us/history/

http://famousbrandnames.blogspot.com/2007/02/keebler.html

Cream of Tartar: This was and is a remarkable product. As related to food, cream of tartar (potassium hydrogen tartrate/ a b-product of wine fermentation) was introduced (1840s) into bread making process to control the interaction (leavening) of baking soda and sour milk. The mixing of baking soda and cream of tartar lead to the creation of baking powder by English chemist Alfred Bird. Because cream of tartar was expensive and its supply unreliable, a more efficient and less costly product was designed by Eben Horsford (Chemist) of New York around 1856. Cream of tartar was used for 'medical' purposes. Lewis and Clark carried it with them and used as a diuretic and purgative

www.acs.org/content/acs/en/education/whatischemistry/landmarks/bakingpowder.html

www.smithsonianmag.com/science-nature/great-uprising-how- powder-revolutionized-baking-180963772/

Figs: The history of figs goes back thousands of years to West Asia. The plant was brought to Mexico in 1560 and later to California. It was brought to the Virginia colony in 1669 and cultivation eventually spread to the southern states and Central America.

www.hort.purdue.edu/newcrop/morton/fig.html

Green Peas: Given the variety of species and the number of vegetable growing areas, this subject was too broad.

Ground Brazil: 'Ground Brazil' was most likely a nut product. The Brazil nut from the *Bertholletia excelsa* tree, is native to Brazil, Venezuela, eastern Colombia, Peru, and Bolivia. The nut is one of 10-30 seeds found in a large softball size pod that can weigh 5.5 pounds. The seed (nut) is related to blueberries and persimmons as contrasted to pecans or walnuts. The tree can grow for as long as 500 years and to a height of 160 feet.

Only a few animals are capable of gnawing through the shell. The Portuguese and Spanish first encountered the nut around 1569 in Brazil and Peru, but the Dutch were the first to introduce it into Europe. The first nuts were exported to New York in 1810. The product shipped to Santa Fe during this time would have come from Brazil by way of Mexico, New Orleans, and the eastern United States.

http://modernfarmer.com/2016/08/brazil-nuts/

www.rainforest-alliance.org/species/brazil-nut-

Andrew F. Smith, *The Oxford Companion to American Food and Drink* (Oxford: Oxford University Press, 2007)

Gum: The chewing of 'gum-like' substances (resins, beeswax, frankincense) goes back millennia. Spruce tree sap was very popular in the early east coast colonial era. In 1848, John B. Curtis experimented with making a spruce tree gum product on a pot belly stove. He later commercially produced the first chewing gum at the Curtis & Son Gum factory in Portland, Maine. The product was made from spruce tree gum. Later he added flavors and paraffin to the product.

Chewing gum we use today originated in 1869 with New Yorker Thomas Adams Sr. Adams was personal secretary to Mexico's former General Antonio Lopez de Santa Anna who was living in New York City. The General introduced him to a gum product (*chicle*) from Yucatan, Mexico. Adams first used the gum in a rolled ball form but soon patented and used a gum making machine to produce the well-known product called Chiclets.

The first mention of *Chicle* was in a series of 12 books written by Spanish Fria Bernardo de Sahagún who arrived in Mexico in 1829- eight years after Cortez' conquest. His observations of all things 'Native' (Aztecs) included notes on the chewing of '*Chicle*' which was procured from the latex of sapodilla tree (evergreen family) in a similar way as latex rubber is harvested. An early product may have been sent to Santa Fe from Mexico, but the logical source would have been the east coast. After 1870, numerous well known gum manufacturers were established.

www.madehow.com/Volume-1/Chewing-Gum.html

https://truewestmagazine.com/what-is-taos-lightning/

www.chewinggumfacts.com/chewing-gum-inventors/john-b-curtis/

www.professorwalter.com/2010/05/the-strange-story-of-chiclets-in-the-united-states.html

www.locogringo.com/chicle-ancient-maya-william-wrigley/

www.wdl.org/en/item/10617/

Liquor (Spirits): (See Also Still in Household Goods) Other than wines and brandies from Mexico and New Mexican vineyards **(See Raisins Below)**, an early product made from wheat was the popular spirit of Santa Fe. Known as 'Taos Whisky' or 'Old Taos' (today Taos Lightening), it was conceived and made by two Missourians in 1824. Simon Turley was the primary distiller, but within a short period of time, new distillers were manufacturing and distributing the product. Taos

Whisky was known as *aguardiente* (fire water). The major distillery was destroyed by fire in 1847, but by then a new product took its place.

Historically, rum was a major spirit of choice in the east prior to and after the revolution. But by 1820, more than twenty-five percent of the population was west of the Appalachian Mountains and the expense of acquiring molasses and producing rum was too great. The spirit of choice became whisky.

Beginning in western Pennsylvania and continuing down the Ohio, whisky production and distribution became big business. After 1820, Bourbon County Kentucky was a key center for production of whisky known as Bourbon County Whisky or Old Bourbon County Whisky.

Sour mash was developed between 1818 and 1823. The practice of 'branding' names on barrels came in the 1830s. In 1830, the falls that impeded Ohio River navigation near Louisville was remedied with the construction of a canal. By 1840, Bourbon County Whisky was officially known as bourbon and by 1847 was a major product heading to Santa Fe. Apart from the importation of spirits from the east, Santa Fe imported what was called 'Pass Wine' from El Paso, Texas. It cost $2.00 a gallon and could be mixed with tobacco, hot peppers, and black gun powder.

> www.santafenewmexican.com/news/local_news/taos-lightning-brought-drunkenness-to-new-mexico/article_f4d54571-acd5-54e1-a665-7a4d36803d8e.html
>
> www.discus.org/heritage/spirits/#13
>
> www.mman.us/tradealcohol.htm
>
> www.livescience.com/33256-difference-between-bourbon-whiskey.html
>
> www.thespruce.com/bourbon-history-timeline-760176
>
> www.tiki-toki.com/timeline/entry/151454/The-History-of-Kentucky-Bourbon/#vars!date=1783-11-13_19:06:38!
>
> www.donaanacountyhistsoc.org/HistoricalReview/2003/HistoricalReview2003.pdf

Mustard: The name is derived from the Latin *Mustum Ardens* which means 'buring must'. The crushed mustard seeds were mixed with 'must' (fresh pressed grapes with seeds, stems, and skin to produce the spicy product. Mustard is of two types- *Sinapis alba* (white seed/ yelow) and *Sinaois nigra* (black seed).

The plant grows throughout the world and was the European 'hot spice' of choice until pepper made its appearance. The spice appeared in Sanskrit and Sumarian literature as early as 3000 BCE and in Egyptian and Chinese texts in the 2000's BCE and 1000 BCE. The Romans took mustard seeds to Gaul (France). The product *moustarde* (English) appeared in literature in the 1200s and the French *moustard de dijon* can be taced to the 1300s.

Although mustard is not identified in the category Medicaments (Medicine), it is worthwhile mentioning it as a medicine. The same civilizations that developed the condiment, used it for medical purposes. Spanish missionaries carried it with them to treat various ailments. There is no way to specifically determine from where the Santa Fe mustard came.

> www.thespruce.com/history-of-mustard-as-food-1807631
>
> https://saskmustard.com/consumer/what-is-mustard/history-origin-of-mustard/
>
> John W. Parry, *Spices: The Story of Spices*, Volume 1(new York: Chemical Publishing Company, INC, 1969)
>
> Andrew Dalby, **Dangerous** *Tastes: The Story of Spices* (Berkeley, Los Angeles: University of California Press, 2000)
>
> www.scribd.com/document/272826430/brief-history-of-mustard-plasters

Nutmeg: This was one of the most sought after spices in history. This aromatic fruit came from the Indonesian tree *Myristica fragrans*- an evergreen that can grow to 30-40 feet. The Banda Islands (east of Java) was the first location of cultivation. Today it is found in its original locations as well as across the West Indies and in Grenada, Guadalupe, and Martinique.

Like other spices, it made its way west via the spice routes but likewise was cut off by the Ottoman Turks in 1493. The Portuguese first encountered in 1511. Later came the Dutch (1602) who then(1621) slaughtered Bandanese males and created a monopoly using slaves. In 1769, a Frenchman smuggled out seeds and took them to Mauritius (east of Madagascar).

The British eventually took over from the Dutch and sent seeds to their Caribbean island possessions. As with other spices, Santa Fe could have received their nutmeg from a number of sources.

> Andrew Dalby, **Dangerous** *Tastes: The Story of Spices* (Berkeley, Los Angeles: University of California Press, 2000)
>
> https://owlcation.com/humanities/The-Blood-Soaked-History-of-Nutmeg

John W. Parry, *Spices: The Story of Spices*, Volume 1(new York: Chemical Publishing Company, INC, 1969)

http://nutty-meg.weebly.com/history-of-nutmeg.html

Pepper (Cayenne Pepper, Red Pepper, Powdered Chile): 'Chilli' (chili) is the Aztec name for the fruit of *Capsicum Annuum* (genus). After the Spanish arrived in Central America, they eventually created seven categories for differentiating the many species of chilies. Originally, chilies were called 'India pepper' or 'pepper of the Indies' (New World). But as was the case with other foods the Spanish disseminated around the world, 'Chilli' took on different names in other locations.

Paprika, cayenne pepper, red pepper, chili powder, and chilies all come from the fruits of capsicum. Cayenne pepper, named after the river in French Guiana (Tupi Indians), came from Mexico and the United States. Red pepper is the ground product made from long peppers of the cayenne group. Red pepper should not be confused with pepper from peppercorns originally from India. Chili powder comes from one of several capsicums one of which is the popular Chile Ancho pod. Powders can also contain other spices depending on the specific dish.

Andrew Dalby, **Dangerous** *Tastes: The Story of Spices* (Berkeley, Los Angeles: University of California Press, 2000)

John W. Parry, *Spices: The Story of Spices*, Volume 1(new York: Chemical Publishing Company, INC, 1969)

http://theepicentre.com/spice/cayenne-pepper/

Peppermint: *Mentha piperita* is one of many species in the genus *Mentha* in the *Lamiacae* Family (basil, rosemary, thyme, lavender, sage and marjoram). There is debate as to when 'peppermint', as contrasted to spearmint, came to be. Some believe it is a hybrid while others contend it was a separate item. Regardless, peppermint was used for both flavoring and medicinal purposes. It appears in Icelandic literature in 1240 and later in English medical literature in 1721.

British Colonists recognized its use by Native Americans. Its commercial production began in 1750 in England and was first developed in Wayne County (east of Rochester) New York in the early 1800s. This product could have come from numerous sources.

http://peppermint.indepthinfo.com/history-of-peppermint

www.ourherbgarden.com/herb-history/peppermint.html

Raisins: From the Latin *racemes* (cluster of grapes or berries), raisins are dried grapes. Associated with wine production, grape cultivation illegally began in 1629 after the Spanish marched north from Mexico City on what would become *El Camino Real* in 1598. In 1629, two monks acquired vines from Mexico and planted them in violation of the Spanish prohibition designed to protect Andalusian grape growers in Spain. Because of the tenuous 'supply chain' and need for sacramental wine, the church and New Mexican growers ignored it.

Thereafter, grapes were cultivated in New Mexico as far north as present day Espanola but the climate (freezes) favored areas south of Espanola and Santa Fe. By the early 1800s, the Socorro and Mesilla Valley Area (South of Albuquerque) was the center of New Mexico's wine and raisin production. The production of raisins paralleled the growth of grapes. In the late 1800s Scottish immigrant, William Thompson, developed a seedless grape that became a standard for raisins in California.

http://aic.ucdavis.edu/profiles/Raisins-2006.pdf

Henry K. Street, *The History of Wine in New Mexico: 400 Years of Struggle* (Ponderosa Valley Vineyards & Winery, 1977)

www.newmexico.org/nmmagazine/articles/post/kissed-by-the-sun-92800/

www.donaanacountyhistsoc.org/HistoricalReview/2003/HistoricalReview2003.pdf

www.grape-nutz.com/tomhill/mission.html

www.texasbeyondhistory.net/paso/

http://dev.newmexicohistory.org/filedetails.php?fileID=525

Rhubarb: Until the 19th century, rhubarb (a vegetable) was not used as a food in Europe but rather an ornamental plant (first seeds imported from Italy in the 1600s) or as a medicinal product. It is mentioned in Chinese medicinal writings as far back as 2700 BCE.

Not indigenous to America, it was an English import from the 1700s on. It was first used as a cure for dysentery, indigestion, headaches, and other ailments. When first used as a food in both England and America in the early 1800s it was called the 'pie plant'. The American commercial cultivation of rhubarb was not established until the 1840s and 1850s.

Later in the 1890s, Luther Burbank developed a unique specie. The earliest rhubarb that went to Santa Fe would have been imported or sent from the east coast. Because it is easily cultivated, it would have come from states east of New Mexico after 1860.

> www.brandycarrnurseries.co.uk/rhubarb/heritage-rhubarb-varieties.htm
>
> Y. P. S. Bajaj PhD, *Biotechnology in Agriculture and Forestry 6/ Crops II.* https://books.google.com/books?id=Sj98CwAAQBAJ&pg=PA339&lpg=PA339&dq=American+cultivation+of+rhubarb+plant+1830&source=bl&ots=a5-1_4rcFD&sig=mQSH1LouEzKoB_OTQ_Ofv8OdmFo&hl=en&sa=X&ved=0ahUKEwiijpLAtI7WAhVBiVQKHbCaBmoQ6AEIRjAI#v=onepage&q=American%20cultivation%20of%20rhubarb%20plant%201830&f=false
>
> Clifford Foust, Dale E. Marshall *Culinary Rhubarb Production in North America: History and Recent Statistics* (HortScience, Vol. 26, Nov 1991) http://hortsci.ashspublications.org/content/26/11/1360.full.pdf

Rice: Rice production was unsuccessfully attempted in the Virginia colony in 1647. There is debate as to when rice was first cultivated in America. According to one source, the first successful cultivation began at Charleston in the South Carolina colony in 1686 when a bag of seeds aboard a ship blown of course arrived there from Madagascar. The seeds are said to have been given to a Dr. Henry Woodard who planted them. This rice was later called Carolina Gold.

Years later another specie of rice, called Carolina White, was sent to the colony. Another source contends that immigrants from Barbados (West Indies) brought rice with them by 1670. Regardless of the debate, by 1700, South Carolina was exporting rice and Georgia was developing the grain. Because labor was scarce, African slaves familiar with rice production in Africa were brought to both South Carolina and Georgia and expanded production because of their expertise. A system of measure and weight was created based on the 'barrel' (162 pounds).

Rice production was initiated in the Lower Mississippi (southeast French Colonial Louisiana) but did not become a commercial enterprise until after 1850.There are conflicting accounts of the first rice cultivation in Louisiana but it most likely resulted from seeds brought from Saint-Dominique in the West Indies via Dauphin Island- port of entry to Mobile (first Louisiana Capital).

Germans settlers brought in by the French along the river cultivated rice along with other crops after 1720. The strain was called 'Providence' rice or 'Bull' rice (short, flat, grain). By 1849, Louisiana ranked 4th in rice production. The rice after 1850 was referred to as 'River' rice that was commercially grow in large quantities.

Carolina rice was not introduced until 1850, but between 1850 and 1860, New Orleans became a new center for milling and marketing. Louisiana rice was primarily exported out of the area, but some could have been sent up river for transport to Santa Fe. Rice production in the southern states during and after the Civil was greatly curtailed and the industry did not recover until the 1880s.

> www.lsuagcenter.com/portals/our_offices/research_stations/rice/features/publications/the-history-of-us-rice-production--part-1
>
> Wayne C. Smith, Robert H. Dilday, (eds.), *Rice: Origin, History, Technology, and Production* (Hoboken,New Jersey: John Wiley & Sons, 20013)
>
> Lee, Chan, "A Culture History of Rice With Special Reference to Louisiana." (1960). *LSU Historical Dissertations and Theses*. 597. https://digitalcommons.lsu.edu/gradschool_disstheses/597
>
> *RICE AGRICULTURE IN THE RIVER PARISHES: THE HISTORICAL ARCHEOLOGY OF THE VACHERIE SITE (16 SJ 40), ST. JAMES PARISH, LOUISIANA* Final report to US Army Corp of Engineers, New Orleans, September 1990, http://www.dtic.mil/dtic/tr/fulltext/u2/a230089.pdf

Sarsaparilla or Sasparilla: *Zarzaparrilla* comes from the Spanish word *zara* (bramble/bush). Numerous species of *Smilax* are native to the Caribbean, Mexico, and South America. It can grow up to 150 feet long. The one specific to Mexico (*aristolochiaefoliaI*) was introduced into Europe in 1536 and used as a medicinal.

Apart from this medicinal plant (vine), the listed product is more likely the one related to the drink (sassaprilla) seen in early western movies and used as an alternative to alcohol. It was made from the dried roots of several species of *Smilax* and not from the sassafras tree. Thus, the product going to Santa Fe under the heading Food, was probably the drink but it might also include sassafras (laurel family) oils that come from the leaves, stems, roots, and bark of the tree and used as a medicinal or tea.

> www.rain-tree.com/sarsaparilla.htm#.WbAtrMiGPcc
>
> www.wildflower.org/expert/show.php?id=7442
>
> http://edis.ifas.ufl.edu/mv130

Starch: This is a difficult subject because of the nature of the item. Starch is a carbohydrate extracted from a variety of agricultural materials. Its historical uses ranged from an adhesive (Egyptians), paper production (Chinese), textile stiffener (Europe), to a modern food additive, and a sweetener. Until the 1700s, starch was primarily made from wheat. Thereafter the potato (potato starch) was more and more popular.

In 1840, an Englishman Orland Jones devised a way to improve the process of making wheat starch. Then in 1842, Thomas Kingsford, working at Colgate and Company wheat starch factory in Jersey City, New Jersey successfully isolated starches from corn and initiated a new era in laundry starch. In 1846 he established T. Kingsford & Son, and later created The Oswego Starch Factory in New York where they manufactured cubes of starch for the commercial laundry business and later for home use.

Corn starch manufacturers expanded throughout the United States after 1846. The Glen Cove Starch Works was established on Long Island in 1855. Although this product is listed under Food (thickener, additive) it could have easily been used in Santa Fe for laundry, giving form to fabrics and clothing. Most likely the product came from New York before 1850 and thereafter could have come from numerous producers.

www.starch.eu/starch/

www.starch.eu/history/

http://frugalsos.com/frugal-living/ways-to-use-cornstarch/

Cynthia Clampitt, *Midwest Maize: How Corn Shaped the U.S.Heartland* (University of Illinois Press, 2015), ProQuest Ebook Central, https://ebookcentral.proquest.com/lib/csu/detail.action?docID=3414429.

Leander J. Bishop*, A History of American Manufacturers from 1608-1860*, Third Edition, 1868, Volume III, (New York: Augustus M. Kelly Publishers, 1966)

www.argostarch.com/about_us.html

Sugar: Santa Fe's earliest sugar (brown), prior to and likely for a period of time after Mexican Independence (1821) came from Mexico and perhaps other locations in the Caribbean. Since the early 1500s, Spain produced sugar throughout the Caribbean and in Mexico. Cane Syrup was poured into wooden conical molds (used today for decoration and candle holders), cooled, wrapped and shipped out. After 1840, the product could have come from several sources. Keep in mind that beet sugar did not develop in America until after the Civil War.

Sugar cane cultivation in French Colonial Louisiana was unsuccessfully attempted as early as the 1750s but did not developed as a major crop until after 1795 when Etienne de Boré's, using knowledge from Cuban and West Indies growers, developed a technique to dehydrate liquid sugar syrup into granules.

Because cotton was not well suited to the moister and hotter climate of southern Louisiana, sugar cane became a major crop. In 1802, 5,000 'hogsheads' of sugar was produced- a hogshead being a barrel holding about 1000 lbs. By 1853, the output was half a million.

The prime sugar cane producing areas were located 130 miles north of New Orleans beginning around Avoyelles and West Feliciana (west and north of Baton Rouge), south to areas east and west of Baton Rouge, and continuing south along the River Road to Plaquemines, Donaldsonville, and Vacherie. John Randolph (of the Virginia Randolph family) established one of first successful sugar plantations in 1841 and built Nottoway Plantation which can be visited today. Louisiana's famous slave plantations along River Road, northwest of New Orleans, were all sugar cane producers.

The irony associated with the sale of sugar to Santa Fe after 1840 is that the product most likely came from eastern refineries and not up the Mississippi from New Orleans. Refining was not an industry of the south- much like the absence of textile manufacturing associated with cotton. Most plantation owners were content to make money from the sale the raw material. They sent their raw sugar to New Orleans where commission merchants, or factors, contracted to send it to Baltimore, Philadelphia, or New York which had eighteen of the thirty-nine refineries as of 1860.

The Havemeyer family began refining sugar on Manhattan Island in 1805 and after moved the operation to Virginia in 1857- becoming America's sugar barons. The Boston Sugar refinery was the first to produce granulated sugar in 1853. Refineries produced sugar loaves or cones which were then sent to confectioners for further processing. United States refineries also imported sugar from the West Indies and especially from Hawaii during the Civil War.

> Roy A. Balling, *A HISTORY OF SUGAR MARKETING THROUGH 1974* , U.S. Dept. of Agriculture, Agriculture Yearbook 1924. www.ers.usda.gov/webdocs/publications/40532/50517_aer382a.pdf?v=42069
>
> Victor Bulmer-Thomas, John Coatsworth, and Roberto Cortés Conde, *The Cambridge Economic History of Latin America*. (New York, NY: Cambridge University Press, 2006)
>
> http://vintagelifedesign.blogspot.com/2012/09/antique-sugar-molds-vintage-item-of-day.html
>
> www.crt.state.la.us/louisiana-state-museum/online-exhibits

John Alfred, *The Modernization of the Louisiana Sugar Industry, 1830-1910* (Dayton, Ohio: Heitmann University, 1987) http://ecommons.udayton.edu/cgi/viewcontent.cgi?article=1122&context=hst_fac _pub

https://sizes.com/units/hogshead.htm

www.raggedsoldier.com/sugar_history.pdf

www.lib.lsu.edu/sites/all/files/sc/exhibits/e-exhibits

www.nysun.com/arts/waterfront-that-sugar-built/60690/

www.nps.gov/cwindepth/StatebyState/Hawaii.html

Sugar Cubes: This product was not sent to Santa Fe until after 1870.

Tea: The earliest authentic account of tea was written by Confucius in the 500s but its medicinal use goes back to the 3000s BCE and its use as a beverage in the 500's CE. The first Europeans to reach China by sea were the Portuguese in 1557. The Spanish, Dutch and British followed. In 1685, the Emperor opened trade to Europeans but later closed it forcing European merchants to trade through Chinese middlemen.

Over time, The East Indies Company (British) became more and more powerful but frustrated with the trade imbalance. The sale of opium was their answer and in response to the Chinese reaction (Opium Wars), and with the help of the British government, forced China to concede territory and accept trade concessions in 1842.

Before this time, Shanghai was a source for tea (what I found at Bent's Fort). The boxes at the fort were labeled Zodiac, GE, Extra Fine, Imperial Twankay, NO 111, Shanghai, Gilman, Bowman & Co. This English company was established in 1840. Prior to 1821, US imports of tea would have come from British merchants and a few merchants in New York and Philadelphia like John Jacob Astor, Thomas Handasyd Perkins and Stephen Girard.

After 1830, American merchants with their superior ships easily competed with the British. They superseded the British with the development of the clipper ship, and directly carried tea from Shanghai and Canton (Guangzhou). The first tea from India arrived in London in 1838. Subsequently, the British government allowed private merchants to develop tea in India. The Bengal Tea Company was formed in Calcutta. Another company formed in London vied to purchase the experimental tea estates of the British East India Company. In 1846, The Assam Company evolved from the merger of the earlier companies. After 1854, teas from Ceylon, Japan, Taiwan were brought to America, although the amount of green tea over black was steady at least 2:1 in tons per year.

> Samuel Ball Esq., *An Account of the Cultivation and Manufacture of Tea in China* (London: Longman, Brown, Green and Longmans, 1848) http://library.umac.mo/ebooks/b25452356.pdf
>
> David R. Mac Gregor, *The Tea Clippers: An Account of the China Tea Trade and Some of the British Sailing Ships Engaged in it from 1849-1869* (London: Conway Maritime Press, 1972)
>
> Joel Schapira, Karl Schapira, *The Book of Coffee and Tea: A Guide to the Appreciation of fine Coffees, Teas, and Herbal Beverages* (New York: St Martin's Griffin, 1996.
>
> Gideon Nye, *Tea and The Tea Trade: Parts First and Second* (New York: G. W. Wood, New York, 1850) https://archive.org/details/teateatradeparts00nyegrich
>
> Samuel Ball Esq., *An Account of the Cultivation and Manufacture of Tea in China* (London: Longman, Brown, Green and Longmans, 1848) http://library.umac.mo/ebooks/b25452356.pdf
>
> www.teabox.com/blog/usa-tea-drinking-country

Wafers: (*obleas*) Most likely this product, as listed in the *guías* was a traditional snack made with wheat, flour, and water and are eaten with a sweet caramel.

> www.mexgrocer.com/39944-00794.html

MEDICAMENTS (Medicine)

Introduction

The term Medicament comes from the Latin *medicamentum* (drug, remedy). The noun *médicament* (French) was used in the 1400s to denote a medical skill or medicinal compound. The subject of the long history of the theory of disease and the development of treatments and remedies for illnesses is too broad to discuss here. However, a brief treatment of disease and illness that affected the people of the west and Santa Fe will give some insight into why the items below were important. Apart from accidents and bodily failure (aging), specific causes of death were not discovered until after 1860 when germ theory was proposed and later proven. The paradigm for the first half of the 19th century medicine was 'desperate diseases call for desperate remedies'. Thereafter, research regarding specific microbes identified specific diseases and a more empirical (scientific) approach was employed.

Prior to the 1870s, death was unknowingly caused by bacteria, viruses, and general bodily failures. Apart from accidents, tuberculosis, pneumonia, diarrhea, cholera, small pox, measles, mumps, scarlet fever, influenza, and whooping cough were major causes of illness and potential death. Historically, hundreds of local medicinal plants and concoctions were available to civilizations for treatments. These homemade (Folk Medicine) and purchased preparations included time proven remedies as well as quackery. Because of the lack of trained medical practitioners in the early west, self medication was the norm until professionally trained individuals made their way across the Mississippi.

Individuals and families maintained 'medicine chests'. To better appreciate the 'medication' process, keep in mind that anyone could prepare and use a substance or could obtain one from an herbalist, an apothecary who prepared compounds, or a pharmacist who was professionally qualified to create and dispense substances. The apothecary or pharmacist might have owned and or worked in a drug store (*farmacia*)

Prior to 1820, most 'drugs' came from Europe but were suspect because America was a 'dumping ground' for the unwanted European drugs. That gave rise to the need to oversee the trade. The 'profession' of pharmacist originated in Philadelphia where in 1821 pharmacists working with the University of Pennsylvania decided to establish the Philadelphia College of Pharmacy. Prior to their work in 1821, these pharmacists created the first *United States Pharmacopoeia (*UPS) based on recommendations from physicians in South Carolina, Connecticut, and the Massachusetts Medical Society.

The list was comprised of mostly herbal medicines. Forty percent of today's 13,000+ medicines are related to the original herbs. The *Dispensatory of the United States of America* was written in Philadelphia (1833) for the purpose of providing an academic description of the preparation of medicinal substances (listed in the 1820 UPS). In 1852, The American Pharmaceutical Association was established.

Apart from eastern medical literature and training, the frontier also produced literature for the rural western and self educated medical practitioner. In 1830, Dr. John C. Gunn wrote *Gunn's Domestic Medicine or Poor Man's Friend in the Hours of Affliction, Pain, and Sickness.* Its purpose was to 'self educate' without having to learn formal medical terminology. Gunn first published his work in Knoxville, Tennessee, and thereafter it went through many editions and spread westward. The book is a combination of psychological, philosophical, and medical ideas. Unlike formal works, Gunn used common sense and common language. He did not hesitate to add personal opinion, including the recommendation that the Tennessee legislature require prostitutes to have licenses and medical check-ups to prevent the spread of syphilis.

Another well know but not so scientific publication was written in 1749 and disseminated until the 1850s, was John Wesley's *Primitive Physic*. Josiah Gregg mentioned in his *Commerce of the Prairies* (1844) that few doctors came to Santa Fe and those who did found it very unprofitable because the people were so poor they couldn't pay for services. His observations about disease and climate were noted in Dr. Daniel Drake's *Treatise on the Principle Diseases of the Interior Valley of North America* (1850-54).

The first large scale enterprise was begun by Thomas Dyott in Philadelphia after 1805. His sign read Philadelphia Cheap Drug Medicine, Chemical Dye, and Glass Warehouse. The United Society of Believers in Christ's Second Appearing (The Shakers) founded the first commercial medicinal herb industry in America in 1827. They cultivated over 200 varieties, processed them, and sold them to pharmacists and physicians world-wide. **(See Herbs Below)** Smith-Klein Company began as a drug store in Philadelphia in 1830. Pfizer and Company originated in 1849 in Brooklyn. The Charles H. Phillips Chemical Company was established in 1849 in Glenbrook, Connecticut. Squibb (Bristol Myers) was founded in Clinton, New York in 1858. By the 1850s, patent medicines saturated the market. One catalogue advertised 1500 individual 'cures'. The larger companies like Park-Davis, Eli Lilly, and Upjohn were established after the Civil War.

Products going to Santa Fe after 1821, were both imported and domestic. Imports were final products or 'raw' materials to be processed by early pharmaceutical companies. As American companies expanded westward, the supply chain shortened. Without specific bottles or lists, determining where the items below came from is difficult.

"medicament". Online Etymology Dictionary. Douglas Harper, Historian. 11 Sept 2017. <Dictionary.com http://www.dictionary.com/browse/medicament>

James O. Breeden, *Medicine in the West* (Manhattan, Kansas: Sunflower University Press, 1982.

www.nps.gov/guco/planyourvisit/upload/Diseases.pdf

http://oldwestdailyreader.com/disease/

www.oregontrailcenter.org/HistoricalTrails/Dangers.htm

www.mnwelldir.org/docs/history/history03.htm www.merriam-webster.com/dictionary/apothecary

J. S. Haller, *The United States Pharmacopoeia: Its Origin and Revision in the 19th Century,* Bulletin of the New York Academy of Medicine 58.5 (1982): 480–492. Print.

George W. Wood, Franklin Bache, *The Dispensatory of the United States of America* (Philadelphia: Gregg & Elliot, 1833) https://books.google.com/books?id=8URHAQAAMAAJ&pg=PA1000&lpg=PA1000&dq=first+mention+of+opium+in+the+US+Pharmacopeia&source=bl&ots=dJdCnuRxJh&sig=J6FkLyul-eNLcEsePnpZrGIC-M0&hl=en&sa=X&ved=0ahUKEwjaxL2kzrbWAhVEsFQKHaknAegQ6AEIMjAC#v=onepage&q=first%20mention%20of%20opium%20in%20the%20US%20Pharmacopeia&f=false

www.ncbi.nlm.nih.gov/pmc/articles/PMC1805252/?page=1

http://tennesseeencyclopedia.net/entry.php?rec=581

Herbert C Covey, *African American Slave Medicine: Herbal and Non-Herbal Treatments* (New York: Lexington Books, 2007)

John C. Gunn*, Gunn's Domestic Medicine or Poor Man's Friend in the Hours of Affliction, Pain, and Sickness* (Knoxville: Johnston and Edwards, 1830), https://archive.org/details/100936421.nlm.nih.gov

Ben H. McClary, "Introducing a Classic: 'Gunn's Domestic Medicine.'" *Tennessee Historical Quarterly*, vol. 45, no. 3, 1986, pp. 210–216. *JSTOR*, www.jstor.org/stable/42626608.

www.auburn.edu/academic/pharmacy/about/pdf/history-pictures.pdf

Richard Harrison Shryock*, Medicine and Society in America 1660-1860* (New York: New York University Press, 1960)

David Dary*, Frontier Medicine from the Atlantic To The Pacific. 1492- 1941*, (new York: Alfred A. Knopf, 2008)

www.scs.illinois.edu/~mainzv/HIST/bulletin_open_access/v28-1/v28-1%20p9-17.pdf

www.gsk.com/en-gb/about-us/our-history/

www.stamfordhistory.org/ind_phillips.htm

Ann Anderson , *Snake Oil, Hustlers, and Hambones: The American Medicine Show* (Jefferson, North Carolina: McFarland & Company, Inc., 2000)

www.fda.gov/aboutfda/whatwedo/history/forgshistory/cder/centerfordrugevaluationandresearchbrochureandchronology/ucm114470.htm#1848

__Agua Foetida__**:** (water of the *Foetida*) This vine plant is scientifically known as *Passiflora Foetida and* commonly known as 'wild water lemon' and 'goat scented passion flower'. It is native to the tropics including the Caribbean. The liquid of fresh boiled leaves was administered as an intestinal anti-parasitic remedy for nematodes and flatworms. A liquid decoction (reduction) from the dried plant was used for colds and chest coughs. This product most likely came from the Caribbean through Mexico.

www.tradewindsfruit.com/content/wild-water-lemon.htm

http://tropical.theferns.info/viewtropical.php?id=Passiflora+foetida

__Alcanfor (Camphor)__: This natural product, going back more than a thousand years, was obtained from the camphor tree (*cinnamomum camphora*) grown in China, Japan, and Southeast Asia (Borneo, Sumatra, Malaysia). It was a fragrant wood used in Babylonia and Egypt and used as a fumigant in Europe during the Black Death (late 1300s). The camphor tree (laurel family) was cut and the bark, stems, and leaves were streamed to obtain the oil which could be further refined to produce a waxy, white or transparent solid.

Many people are familiar with its character smell (Vicks VapoRub). Camphor was used as a means to interact with body heat to release the vapor to counter the pain of arthritis, joints and muscular strain. When inhaled, the vapor loosened airway mucus congestion. Because of its slight antiseptic and analgesic properties, it was used to promote skin irritations (eczema, bug bites), repel insects, reduce nerve ending pain. Between 1825 and 1839, more than 600,000 pounds were directly imported from China.

file:///C:/Users/schel_000/Desktop/molecules-18-05434.pdf

www.cloverleaffarmherbs.com/camphor/

http://uses.plantnet-project.org/en/Cinnamomum_camphora_(PROSEA)

John Church, *An inaugural dissertation on camphor: submitted to the examination of the Rev. John Ewing, S.S.T.P. provost; the trustees & medical faculty of the University of Pennsylvania, on the 12th of May, 1797; for the degree of Doctor of Medicine*: http://resource.nlm.nih.gov/2546009R

Hazard's United States Commercial and Statistical Register, Containing Documents, Facts, and Other Useful Information, Illustrative of the History and Resources of the American Union, and of Each State. Colorado State University (on line)

Balsam: This item is a bit confusing. From the Latin *balsamum* (gum of the balsam tree), this product is actually obtained in resinous drops or oils from a number of trees or bushes. The balsam going to Santa Fe was most likely from the popular Black Cottonwood tree, the resin from the Canadian Balsam Poplar (Canada), or the Narrowleaf Balsam Poplar tree (Rocky Mountain States). These are the only three balsams that yield the substance. It was most used for medicinal purposes. Its properties are useful as a diuretic, for stimulating mucous membranes, as an anti-inflammatory, soothing a sore throat, and in large doses as a purgative.

www.etymonline.com/index.php?l=b&p=4&allowed_in_frame=0

www.botanical.com/botanical/mgmh/b/balofg05.html#his

www.centerforinquiry.net/blogs/show/haynes_arabian_balsam/

https://joybileefarm.com/balm-of-gilead/

www.wisegeekhealth.com/what-are-the-medicinal-uses-of-balm-of-gilead.htm

Bladder Ointment: Because there were so many male and female bladder ailments and diseases, and so many types of ointments, this subject was too voluminous to develop.

Blister Plaster: This product, generally called a rubefacient, was designed to create a localized increase in blood flow to ease the ache and pain of arthritis or other musculoskeletal issue. Specific types included one made with mustard, another of cayenne (capsicum), and another from cantharides (beetles)- also known as 'Spanish Fly', blistering fly, or blistering beetles.

www.henriettes-herb.com/eclectic/bpc1911/cantharis-vesi.html

https://thenaturopathicherbalist.com/herbal-actions/l-r/rubefacient/

www.epharmacognosy.com/2012/04/cantharides-beetles-synonyms-spanish.html

Chamomile: One of the oldest medicinal herbs known, *Marticaria recutita* (German) and *Chamaemelum nobile* (Roman) are the two major varieties. The plant's medicinal forms include the whole plant, powder, tincture, and tea. At the time it was sent to Santa Fe, it could have been called a 'cure all'- treating everything from acne to ulcers. Today, many continue to claim the same cures, but few have been clinically validated. However, research has identified its anti-inflammatory, anti-bacterial, and sedative properties.

> www.ncbi.nlm.nih.gov/pmc/articles/PMC2995283/
>
> http://medicinalplants.us/chamomile-traditional-use-and-therapeutic-indications
>
> www.herbwisdom.com/herb-chamomile.html

Cough Syrup: This is one product that was associated with many debatable remedies and claims. Syrups usually consisted of one or more substances that included alcohol (up to 40%), morphine, heroin, opium, strychnine, sugar water, cannabis, turpentine, kerosene, and an herb or two. Two early examples (1843) are Dr. James C. Ayers' Cherry and Thomson's Compound Syrup of Tar and Wood Naphtha introduced by druggist Samuel P. Thomson of Philadelphia.

> Ann Anderson , *Snake Oil, Hustlers, and Hambones: The American Medicine Show* (Jefferson, North Carolina: McFarland & Company, Inc., 2000)
>
> https://sha.org/wp-content/uploads/2016/05/ChemicalAnalysis.pdf
>
> www.newenglandhistoricalsociety.com/james-cook-ayer-sarsaparilla-king-lowell-mass/
>
> https://istc.spwebprod.uillinois.edu/cms/One.aspx?portalId=427487&pageId=768 778

Eucalyptus: The use of this product developed after British Surgeon of the First Fleet, John White, helped establish a penal settlement at Botany Bay, Australia in 1786. He distilled the tree leaves to create an oil he called 'Sydney Peppermint' and sent it to England where it was found to be more effective than peppermint in the treatment of colic. In 1848, a British pharmacist moved to Australia and thereafter an industry was established. Because the product was not commercially developed for some time thereafter, the imported product going to Santa Fe most likely arrived after 1861.

> http://adb.anu.edu.au/biography/white-john-2787
>
> www.eucalyptusoil.com/eucalyptus-history
>
> www.botanical.com/botanical/mgmh/e/eucaly14.html

Herbs: (Medicinal): The history of medicinal herbs and their uses is as old as civilization. Regarding this entry, the historical information will be limited to material as closely related to Santa Fe as possible. European colonists to the New World brought an array of plant medicines with them but had no knowledge of native plants and their uses. The indigenous people South and North American taught them.

One American enterprise that specialized in the cultivation and sale of medicinal herbs was the Shakers. Originating in Manchester, England in the mid 1700s, many of them migrated in 1774 and 1776, to established a settlement north of Albany New York (Waterliet)- across the Hudson River from present day Troy. By 1800, they established eleven communities. As early as 1827, they initiated an herbal drug industry that was based on the cultivation and preparation of medicinal herbs.

Their cultivation of herbs expanded to a settlement in Ohio. Catalogues were published and in 1837 listing 130 herbs, and 25 other preparations that were sold to 22 agents, 10 doctors, and other individual buyers. They were sent to cities across New York as well as hospitals in Philadelphia. By1860, they were sold in San Francisco and through companies in London, England.

www.motherearthliving.com/Health-and-Wellness/Shaker-Herbs

Amy Bess Miller, *Shaker Herbs: A History and Compendium* (New York: Clarkson N. Potter, Inc., 1976)

Magnesium: Today we understand this product is a metal that activates numerous cellular reactions in the body. First discovered by the early Greeks near the city of Magnesia (north of Athens), it was originally used as a cleansing agent (laxative). In the early 1800s, English chemist Sir Humphrey Davy identified it as a metal. Irish born Sir James Murray first worked with magnesia to create a mild laxative and anti-acid. In 1852, magnesium was first commercially produced and exported. Charles H. Phillips created 'Milk of Magnesia' in 1872. Most likely the magnesium that went to Santa Fe was in a pure form to be mixed later, or as a finished product after 1860.

www.ancient-minerals.com/magnesium-benefits/facts-info/

www.chemicool.com/elements/magnesium.html

www.culturenorthernireland.org/article/616/sir-james-murray

www.magnesiumsquare.com/index.php?option=com_content&view=article&id=13&Itemid=31

Mercury Unguent: Extracted from an ore called cinnabar (HgS) it is also called quick silver or liquid silver. **(See Vermillion in Household items)**. The ancient Chinese, Egyptians, Persians, Greeks and Romans used concoctions (compounds) of mercury as drinkable elixirs, pills, and topical applications including bodily ornament.

After the 1400s, apart from 'manufacturing uses, the element, in compound form (liquid or pills), was used as a treatment for sexually transmitted diseases (especially syphilis). It was also used to treat skin infections. Before 1850, this product would have been imported from Spain or Peru and processed by American companies. After 1850, the California gold fields provided a new source.

> file:///C:/Users/schel_000/Desktop/mercury_neuropathy_19306.pdf
>
> www.history.com/news/history-lists/7-unusual-ancient-medical-techniques
>
> http://mercurypolicy.scripts.mit.edu/blog/?p=367
>
> http://corrosion-doctors.org/Elements-Toxic/Mercury-medical.htm
>
> www.pharmaceutical-journal.com/opinion/blogs/syphilis-and-the-use-of-mercury/20201679.blog

Nitric Muriatic Acid: According to the 1817 article (below) this product was recommended as a substitute for mercury products. Nitric acid ($HNO3$) a colorless, acrid smelling liquid is used today in the manufacture of inorganic and organic nitrates and in compounds for fertilizers, explosives, and dyes. Muriatic acid is the old name for hydrochloric acid (HCL). It was made from hydrogen chloride dissolved in water. According to Dr. Scott (below), to obtain nitric muriatic acid, he combined the two chemicals to form a liquid that he used for a number of skin ailments as well as hepatitis, bile issues, nervous issues, other afflictions of the liver, indigestion, and mouth ulcers. In the treatise below, surgeon Dunlap describes the use of nitro muriatic acid baths in the treatment of patients with intestinal ailments which for him included worms, indigestion, pleurisy, and dyspepsia (bloating, nausea, acid reflux). This item most likely came from chemical (pharmaceutical) companies in the United States.

> Scott, H. "On the Internal and External Use of the Nitro-Muriatic Acid in the Cure of Diseases." *Medico-Chirurgical Transactions* 8 (1817): 173–200. Accessed from: www.ncbi.nlm.nih.gov/pmc/articles/PMC2129006/
>
> https://pubchem.ncbi.nlm.nih.gov/compound/nitric_acid#section=Top
>
> www.thoughtco.com/what-is-muriatic-acid-608510

A TREATISE ON THE MEDICAL POWERS OF THE NITRO MURIATIC ACID BATH IN VARIOUS DISEASES WITH CASES By Walter Dunlap Surgeon, London, 1820.
https://ia800201.us.archive.org/13/items/b21987798/b21987798.pdf

www.medicinenet.com/script/main/art.asp?articlekey=8285

Opium: Although opium was listed in the First US Pharmacopoeia, its uses and preparations were best described in *The Dispensatory of the United States of America*. More than fifteen pages are dedicated to its origin, types, appearance in other countries, general history, commercial uses, chemistry, storage, relation to other substances, and preparations.

The active ingredients were identified in 1803/5 by Friedrich Sertuerner, a German pharmacist's assistant. The substance, called morphine, was first sold in England in 1821, and commercially manufactured (1827) by E. Merck & Company (Germany). By the 1850s its administration by syringe was the standard pain protocol.

Opium in its unprocessed state could be used in a number of combinations and for various ailments. Laudanum (10% opium, 90% alcohol) was used for pain, intestinal issues, coughs, and fever. It was called the 'aspirin of the nineteenth century'. It could be mixed with wines and flavoring spices. By the 1850s, British drug companies produced numerous opium derivatives (products) that included the following: opiate electuary, powder of chalk with opium, opiate confection, powder of ipecacuanha and opium (Dover's Powder), tincture of soap and opium, liquorice troches with opium, wine of opium (Sydenham's Laudanum), vinegar of opium, extract of opium, opiate clyster, suppositories, opium liniment, plaster of opium, tincture of opium, or laudanum, and the camphorated tincture, known as paregoric elixir. The profession of pharmacist hardly existed before 1840 and until the British Medical Act of 1858 there were no standards or agreements related to the above preparations.

Until the 1870s, the opium used in England, and what products may have been exported to the United States, came from Turkey and not India or China. American east coast businessmen were involved in the opium trade from the late 1700s and well into the 19th century. Although opium (Turkish) was used as a medium of exchange for Chinese products (silk, tea) as contrasted to medical use, it was brought into the United States in the 1840s. Without more information, it is difficult to determine if the opium going to Santa Fe was in bulk form and or, a form to be utilized by an apothecary, pharmacist, doctor, or individual.

https://biotech.law.lsu.edu/cases/fda/milestones.html

www.victorianweb.org/victorian/science/addiction/addiction2.html

Virginia Berridge and Griffith Edwards , *Opium and the People: Opiate Use in Nineteenth-Century England* (London and New York: Allen Lane/ St. Martin Pres, 1981)

www.pbs.org/wgbh/pages/frontline/shows/heroin/etc/history.html

www.uchospitals.edu/news/2005/20050519-morphine.html

https://19thct.com/2008/03/02/laudanum/

www.legendsofamerica.com/we-drugs.html

Jacques M. Downs *American Merchants and the China Opium Trade, 1800-1840* The Business History Review*,* Vol. 42, No. 4 (Winter, 1968), Published by The President and Fellows of Harvard College Stable www.jstor.org/stable/3112527

http://thequackdoctor.com/index.php/mrs-winslows-soothing-syrup/

Opium Vials: Given the fact that different forms of opium were contained in vials, determining from where they came is not possible without the vial and labels. To appreciate the variety of products, Search opium vials in Google Images and trace the source of the photo. Dr. J. B. Munn's Elixir of Opium was a well known example from this time. It was first made in the 1830s but highly popularized after Abraham B. Sands & Company (New York City) bought the recipe in 1841. Another was Mrs. Winslow's soothing syrup made in 1845 by druggists in Bangor, Maine. It was comprised of morphine and alcohol and made for teething babies.

http://thequackdoctor.com/index.php/mcmunns-elixir-of-opium/

www.bottlepickers.com/bottle_articles320.htm

www.woodlibrarymuseum.org/museum/item/529/mrs.-winslow's-soothing-syrup

Pills for Syphilis (See also Mercury Unguent above): This product was a compound consisting of mercury (Hg) and mercuric chloride (HgCl2) that when combined formed Hg2Cl2. It was also called Calomel (Black Beauty in Greek). The preparation made its way to America from Europe in the 1700s. The famous Philadelphia physician and friend of Franklin and colonial personalities was Benjamin Rush who developed a 'bilious' pill (calomel) for the treatment of yellow fever and eventually for any ailment that afflicted people. It also functioned as a powerful laxative.

The standard prescribed doses at the time were 1000X's greater than present day levels considered safe ingestion by the EPA. Although Rush died in 1813, and great criticism of the use of mercury was voiced by both Europe and American physicians, his 'pills' made their way west with the Lewis and Clark Expedition for the purpose of addressing syphilis and constipation due to a high meat diet. After 1820, pills were increasingly produced by a number of American manufacturers from the east coast west.

www.westonaprice.org/health-topics/environmental-toxins/beautiful-black-poison/

www.edwardhandmedicalheritage.org/images/EHMHF_Calomel%20and%20its%20Critics%207_3_2014%20(2).pdf

www.lewis-clark.org/article/2564

www.ncbi.nlm.nih.gov/pmc/articles/PMC1053609/pdf/brjvendis00178-0017.pdf

Powders: This is a generic name for a variety of medicaments that were offered in dry pulverized form. The specific item could have been of one substance or a compound of two or more substances. They could be prepared by the apothecary or druggist or bought pre-packaged. Powders were eventually replaced by pills that came into production after 1840.

www.memidex.com/powder+medicine

www.hagley.org/research/digital-exhibits/advertising-and-branding

www2.linnaeus.uu.se/online/pharm/lakemedelform.html

Purgatives: Generically known as laxatives, this product could have been one of several types. Technically, laxatives were called aperients and relieved constipation. A purgative was a more powerful laxative. The most powerful was called a cathartic. The most popular purgative was a large dose of calomel. These medicaments would have come from American companies or prepared by an apothecary or pharmacist in Santa Fe.

www.quora.com/Whats-the-difference-between-laxative-and-purgative

Quinine: Also referred to as 'sacred bark', 'cardinal's bark', and Jesuit's bark', it was the processed product of the South American cinchona tree (bark) and used for the treatment of malaria (parasite), yellow fever (virus), and other agues (fevers). Identified by the Spanish in Peru in the 1600s, quinine was first extracted and isolated from the bark by a French chemist and French pharmacist in 1830.

Apart from its chemical history, it is possible that Dr. John Hamilton Robinson, second in command of the Zebulon Pike Expedition in 1806-07, gave a quantity of quinine pills to William Becknell in Missouri sometime before Robinson died in 1819 from yellow fever in Natchez, Mississippi. He had originally learned about the drug in Mexico and received some pills. The story (with documentation) exists that Becknell, having helped the Texans gain Independence in 1836, received a 'head right' (land grant) and thereafter used part of it as collateral for the purchase a large quantity of quinine pills.

Another individual directly associated with the Santa Fe Trail and quinine was Dr. John Sappington, the first physician in Arrow Rock, Missouri (on the future Santa Fe Trail) in 1819. At the advice of friend Thomas Hart Benton, Sappington left Tennessee in 1817 and moved to the Boon's Lick area Missouri (William Becknell). In 1819, he moved up river to Arrow Rock and by 1830 had amassed thousands of acres of land and slaves. The possibility exists that Sappington had obtained quinine in the early 1820s and 'experimented' with it like other doctors.

As a result of a married daughter who contacted malarial fever in 1830, he seriously worked with quinine and began to manufacture 'Sappington's Anti-Malaria Pills' comprised of a number of herb oils, licorice, and 1.5 grains (97.2 mg) of quinine. The sale of Sappington's Anti-Fever & Ague Pills rapidly expanded throughout Missouri by 1833 and then throughout the Lower Mississippi Valley. Dr. Sappington described the recipe for making the pills in his book *The Theory and Treatment of Fevers*- the first medical book west of the Mississippi.

Most likely these pills made their way to Santa Fe in the 1830s and thereafter as evidenced by the September 26th, 1846 entry of the diarist Susan Shelby Magoffin who said she gave Sappington pills to a fever sufferer in Santa Fe. On November 17th, she wrote that she too had suffered three weeks with fever and, while in San Gabriel, was cured by Sappington pills.

www.discoveriesinmedicine.com/Ni-Ra/Quinine.html

www.ncbi.nlm.nih.gov/pmc/articles/PMC3121651/#__sec1title

www.sciencemuseum.org.uk/broughttolife/objects/display?id=5631

https://founders.archives.gov/documents/Madison/03-05-02-0179

http://celticowboy.com/doctor%20john%20hamilton%20robinson.htm

http://williambecknell.com/?page_id=202

Lyon G Tyler (ed.), *Taylor's Quarterly Historical and Genealogical Magazine*, Volume III, Richmond Press Inc., Richmond, Virginia, 1922. https://books.google.com/books?id=sgs8AAAAIAAJ&pg=PA154&lpg=PA154&dq=Dr.+John+Hamilton+Robinson&source=bl&ots=NgKF_z7OqL&sig=xl5Ie_

Kmd0xOntD0dQ7gzaJAg&hl=en&sa=X&ved=0ahUKEwjLtPPZvrnWAhXBsVQKHQQ5AwIQ6AEIOzAF#v=onepage&q=Dr.%20John%20Hamilton%20Robinson&f=false

www.santafetrail.org/pdf/Dr-John-Sappington.pdf

http://shsmo.org/historicmissourians/name/s/sappington/

Christopher Phillips, *Missouri's Confederate: Claiborne Fox Jackson and the Creation of Southern Identity in the Border West* (Columbia, Missouri: University of Missouri Press, 2000)

Stella M. Drumm (ed.)), *Down the Santa Fe Trail and Into Mexico: The Diary of Susan Shelby Magoffin 1846-1847* (Lincoln: University of Nebraska Press, 1982)

Salts: This item has numerous meanings. The first use of the term refers to 'Normal Salt'- the primary example being common salt (NaCl) which has been a vital product for our existence and for food preservation. The second meaning is any product acquired from the combination of an acid and a base. These salts are called Acid, Basic, Double, and Complex Salts which are commercially produced.

Common Salt was used for a sore throat, as an antibacterial, toothpaste, in an infusion against cholera (1832), bathing, anti-inflammatory for skin ailments, relief from rheumatic pain, constipation, bee stings, gum issues, hot foot baths to relieve headaches, and a mixture with brandy and vinegar to treat burns.

Another meaning is Mineral Salts that are inorganic salts naturally occurring in mineral (rock) form. Those necessary for health include sodium, calcium, ammonium phosphate, potassium, magnesium, chlorine, sulphur, and phosphorus. Mineral salt compounds like magnesium sulfate (Epsom Salt), sodium sulfate (Glauber Salt), potassium sodium tartrate (Rochelle Salt) were primarily used as laxatives and cathartics.

http://freechemistryonline.com/what-is-salt.html

www.jagranjosh.com/general-knowledge/salt-concept-properties-and-uses-1456825976-1

file:///C:/Users/schel_000/Desktop/Saltinmedicalhistory.pdf

www.thoughtco.com/definition-of-salt-604644

www.diyhealthremedy.com/10-best-uses-for-salt-in-medical-treatments/

www.tribunes.com/tribune/sel/worm.htm

Eberhard J. Wormer , *Blood, Sweat, and Tears: Salt in Medical History*. www.researchgate.net/publication/288511713_Blood_Sweat_and_Tears_-_Salt_in_Medical_history

http://health.howstuffworks.com/wellness/natural-medicine/home-remedies/uses-for-salt-medical-treatments-ga.htm

www.reference.com/science/examples-mineral-salts-34a5b8a50b554dc9

http://health.ccm.net/faq/3501-functions-of-mineral-salts

Sulphur Fluid: This product, manufactured by a chemical company was a sulphurous acid whose properties resembled Sulphur Dioxide. In a diluted form it was a potent germicide, a wash for parasitic skin diseases, a cloth bleaching agent, and a disinfect for use in the home. According to the handbook (below) a dilution of 2-3X was useful for pyrosis (heartburn). After 1870, a condition called sarcinae, a genus of non-motile, anaerobic bacteria that caused gastric issues, was identified and treated with this product.

H. Albert Buck (ed.), *A Reference Handbook for the Medical Science Embracing the Entire Range of Scientific and Practical Medicine*, Volume VII, (New York: William Wood and Company, MDCCCCIV) https://books.google.com/books?id=hSI4AQAAMAAJ&pg=PA563&lpg=PA563&dq=what+was+medical+sulphur+fluid+1840?&source=bl&ots=yrhmggZnB&sig=W4_fBfG_Y7qsBT6p_QkZ1iyiG4&hl=en&sa=X&ved=0ahUKEwj2krCF38jWAhWor1QKHT3CoQ6AEINjAD#v=onepage&q=what%20was%20medical%20sulphur%20fluid%201840%3F&f=false

www.medicinenet.com/script/main/art.asp?articlekey=32175

http://medical-dictionary.thefreedictionary.com/sarcinae

www.ncbi.nlm.nih.gov/pmc/articles/PMC3193598/

Yellow: (*quina Amarilla)* This item was a challenge. It could have been miss spelled because *quina* has no translation. It could be related to quinine (above). The only references to 'yellow' that have to do with medicaments are as follow. A medical missionary, Dr. Thomas Williamson established the Dakota Pejuhatazzi Mission in 1852. Pejuhatazzi (Yellow Medicine) is the Dakota name for a medicinal.

Lt. Col. W. H. Emory twice mentions this plant whose scientific name is *Menispermum Canadense* in his *Notes of A Military Reconnaissance From Fort Leavenworth Missouri to San Diego California*. The plant is commonly known as 'Canadian Moonseed' and its seed was used in a tonic form as a diuretic, a purgative, for indigestion, bowel disorders. Its root could be prepared and applied externally as a salve for sores.

http://immigrantlegacy.com/?page_id=40

www.co.ym.mn.gov/index.asp?Type=B_BASIC&SEC=%7B30AE3EFE-D26D-4C59-9900-BCC5DA82AC32%7D

http://practicalplants.org/wiki/Menispermum_canadense

http://naeb.brit.org/uses/search/?string=menispermum+canadens

MISCELLANEOUS

Books (Children's Books, Mass Books, Print Books, School Books):

The development of print culture in Latin America was evident after 1492. Sailors from primarily Spain but also from other European countries brought books to Latin America. Mexico City established a printing press in 1539. The government presses were designed to create conversion literature for the Christian missionaries. In the early years, the printing process was regulated by the government and laws were established to preclude the dissemination of heresies and literature associated with the Reformation.

Even with restrictions, European literature illegally made its way west. During the 19th century, printing became less expensive due to printing technologies (printers/presses) that increased production and reduced cost. Other advances in printing at that time included lithography (1820s), book binding (1832), Chromolithography (1837), first use of photos in books (1843), and pulp paper (1844). Prior to the 1834, most books (very limited numbers) were procured from Spain, Europe and Mexico City by way of *El Camino Real*. They would have been in Spanish.

Santa Fe's first printing press was freighted by wagon from St. Louis by Josiah Gregg in 1834. The press was a Ramage Screw Press developed by Scottish born Adam Ramage in 1820. It was primarily wood with an iron platen (the plate that presses the paper against the type). Padre Antonio José Martinez printed the first book, *Cuaderno de Ortografia* (Spelling Notebook) for children. Antonio Barrerio published four issues of New Mexico's first newspaper *El Crepusculo de la Libertad* (The Dawn of Liberty). Padre Martinez purchased the press from Ramón Abréu and moved it to Taos where it was used by him and his printer Jesús Maria Baca. In the 1840s it was moved back to Santa Fe and used to print General Stephen Watts Kearney's first laws for the new territory.

According to Thomas Leech, Director of the Palace of Governors Print and Bindery in Santa Fe, other than the limited number of religious books from Mexico or those locally printed locally by Padre Martinez or personal books carried on the Santa Fe Trail, most of the books arrived Santa Fe after 1870.

www.oxfordbibliographies.com/view/document/obo-9780199766581/obo-9780199766581-0047.xml

Hortensia Calvo, *The Politics of Print: The Historiography of the Book in Early Spanish America*. *Book History*, vol. 6, 2003. www.jstor.org/stable/30227351.

www.prepressure.com/printing/history/1800-1849

https://libguides.unm.edu/book-history/new-mexico

https://letterpresscommons.com/press/ramage-screw-press/

www.palaceofthegovernors.org/PrintShop/coll.html

http://pressingthroughtime.com/printing-presses-come-to-taos/

http://newmexicohistory.org/people/hispano-literary-tradition-in-new-mexico

www.topix.com/forum/city/cimarron-nm/T50OLUS68MPADBVAD/re-states-first-printing-press-cloaked-in-mystery

MUSICAL INSTRUMENTS

Harmonicas: The first recognized *mundharmonica* (mouthorgan), called an 'aura', was created in 1820 by Christian Frederich Buschmann. It produced a single note in each hole when blown. 1825, Joseph Richter created an instrument that produced both blown and drawn sounds as evidenced in modern harmonicas. His harmonica had ten holes that produced twenty sounds. Harmonicas were produced in Austria and Germany under strict protection (secrecy). Christian Messner in Trossingen, Germany was one such producer who developed a reputable company after 1827 when he began to mass produce the instrument. In 1856, a friend, Matthias Hohner visited Messner and memorized his techniques and opened his own company in 1857. Hohner became the premier European harmonica maker and began exporting to the United States in 1862. James Bazin a Canton, Massachusetts inventor of musical instruments read about European harmonicas and created what may be the first reed harmonica in America around 1831. He later made and sold then through the Ashford Music Store in Boston. After 1860, numerous American companies produced harmonicas.

www.smithsonianmag.com/history/industrial-espionage-and-cutthroat-competition-fueled-rise-humble-harmonica-180952733/

http://artistworks.com/blog/history-harmonica-part-1

www.smithsonianmag.com/history/industrial-espionage-and-cutthroat-competition-fueled-rise-humble-harmonica-180952733/

www.thecantoncitizen.com/2010/11/18/james-a-bazin-a-glimpse-of-history-through-thin-gold-frames/

www.slidemeister.com/forums/index.php?topic=4538.0

Violins (small, large): Although Italy was historically known for its violin makers, the craft expanded throughout Europe in the 1700s and later to America. The first depiction of a violin was shown in a 1535 Italian fresco. It was a three stringed instrument. Author and violin maker Christopher Germain identifies three periods of American violin making- two of which are relevant to this topic. The first was the colonial period when the violins were made for personal use (hobby). The first American violin was made around 1760, but the quality of American violins thereafter was limited due to the lack of European models. Boston became a center for violin making in the early 1800s.

The second period (around 1850) began with the appearance of European luthiers (string instrument makers) and touring European performers who brought European instruments with them. Ira J. White (farmer, furniture maker), was the first to study a Stradivari in 1843 when a European virtuoso visited Boston. White eventually produced high quality instruments for his shop in Boston. White's brother Asa also was famous for his violins. In the 1840s, George Gemunder, a son from a well known German family of luthiers migrated to Lynn, Massachusetts, later to Boston and finally to New York (Astoria, Long Island) where he established his reputation along with neighbor Steinway & Sons.

Different styles of violins evolved in various regions and towns. The 'Schools' developed their names according to the uniqueness of area. The Boston School, New York School, Chicago School, and Philadelphia School were the largest. The violins going to Santa Fe between 1821 and 1860 were most likely not expensive concert or virtuoso types but less expensive ones. Also keep in mind that violins and fiddles are the same instrument. Fiddles are best associated with folk music.

When one thinks of Santa Fe history, one normally thinks of the Spanish and Mexican influences and the evolving Hispano/ Hispanic culture. The music of Santa Fe incorporated the violin from the earliest time when Spanish colonists brought the violin to the area and used it in religious music (mass) and for converting the

Pueblos to Christianity. The same violins were used for secular music, especially the fandango*,* and was adapted to the music of other ethnic groups settling in Santa Fe.

> Anthony Baines , *European and American Instruments* (New York:The Viking Press,1966)
>
> www.npr.org/templates/story/story.php?storyId=5344096
>
> www.johnsonstring.com/american-collection
>
> https://reverb.com/news/why-are-american-violins-so-unloved
>
> www.johnsonstring.com/american-collection/
>
> www.pbs.org/wgbh/roadshow/tips/violins.html
>
> www.corilon.com/shop/en/info/george-gemunder-and-sons-violin-makers.html
>
> https://newmexico.heavensentgaming.com/lexicon/new-mexico-music/

Violin Accessories (Pegs, Strings): These items would have come from the same sources as the violins.

RELIGIOUS ITEMS

Note

As with books, the religious objects below would logically have come by way of Mexico in the early years and after 1840 from the east. It is possible that some objects made in Paris by the Church of St. Sulpice could have made their way to Mexico and, or New Orleans and then on to Santa Fe. After 1862, there were over 120 firms that mass produced religious products in both Europe and the United States. Very likely religious objects were sent to Santa Fe after 1850 by the Benzinger Company (**See Holy and Seals Cards Below**). After 1860, numerous firms importing objects clustered in the area around Barclay Street in Manhattan, New York.

> http://www.catholic-forum.com/members/bjdevitt/history.htm#Sulpice
>
> Colleene Mc Dannell*, Material Christianity: Religion and Popular Culture in America* (New Haven and London: Yale University Press, 1995)

Black Rosaries:Crosses:Crosses (Metal): Gold Plated Statues of the Virgin:

Holy Cards and Seals: Holy cards go back to the earliest days of paper cut cards in the 1300s and wood block prints in the 1400s. The oldest surviving prayer card is a St. Christopher card from 1423. Holy cards were used to commemorate funerals, first communions, confirmations, and religious education.

Modern card production got its start with the work of Alois Senefelfer (Germany) who developed lithography technology in 1796. Lithography is printing from a flat treated surface that repels ink and prints the desired image. His technique was adopted by London Printers and spread to Europe and the United States during the first twenty-five years of the 19th century. Color cards became available with chromolithography.

Although Paris was the source for much of Catholic imports in the 1840s, Charles and Nicholas Benzinger established a publishing house in New York in 1853 and later in Cincinnati. They became the largest producers of Catholic materials.

www.catholic-forum.com/members/bjdevitt/history.htm#intro

www.catholiccompany.com/prayer-cards-c807/

www.historyofinformation.com/expanded.php?id=503

http://omeka.archnyarchives.org/exhibits/show/holycards/history

http://sites.tech.uh.edu/digitalmedia/materials/3350/History_of_Litho.pdf

www.waltergrutchfield.net/benziger.htm

Portraits of Saints: **Religious Medals**:

Other

Beads for Indian Trade: **(See Beads in Personal)**

Small Notebooks (Writing): **(See Paper in Household)**

Toy Clocks: **(See Clocks in Household)**

Closing Remarks

I hope this work has provided you with a greater appreciation for the 'supply chain' process by which goods make their way from production to consumer- especially the process by which they were sent to Santa Fe between 1821 and 1860. If you have the opportunity to visit Santa Fe, take the time to experience the New Mexico History Museum/Palace of the Governors and see some of the items listed above. A few miles south of Santa Fe, the living history museum of *El Rancho de las Golondrinas* is equally rewarding for experiencing the nature of New Mexico's supply chain prior to 1800 .

My challenge to other historians and students interested in 'material culture' and the Santa Fe Trail supply chain is to continue to research the history of shopkeepers and merchants in Santa Fe, the business agents who conducted purchases and filled the orders in the United States and around the world, the process of financial arrangements, and the many companies that conveyed the goods via ships, wagons, and eventually rail.

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